

FIG. 1A

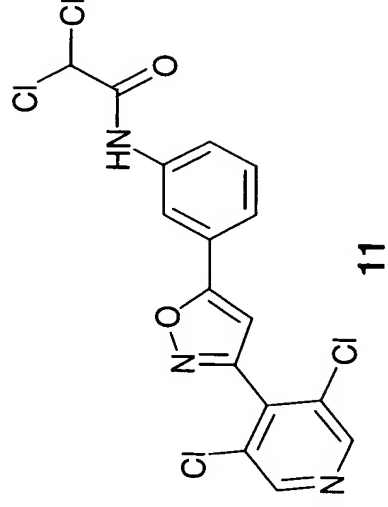
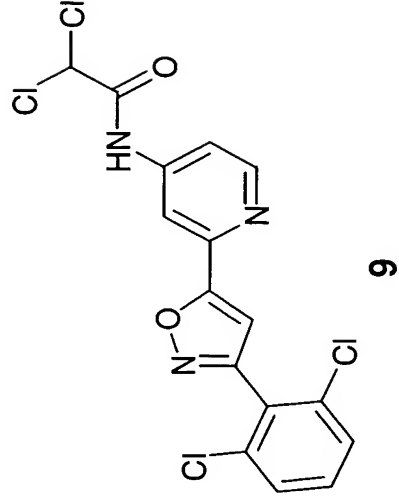
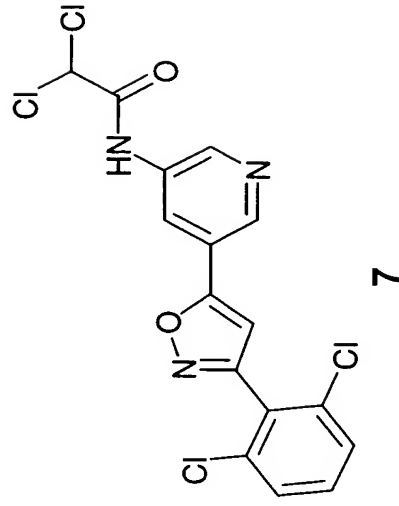
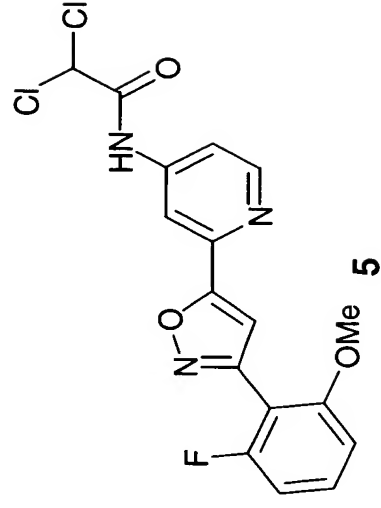
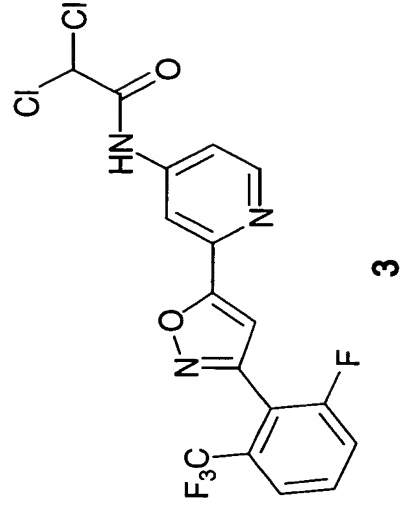
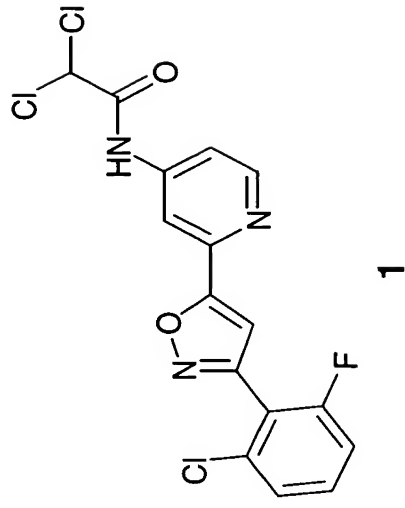




FIG. 1C

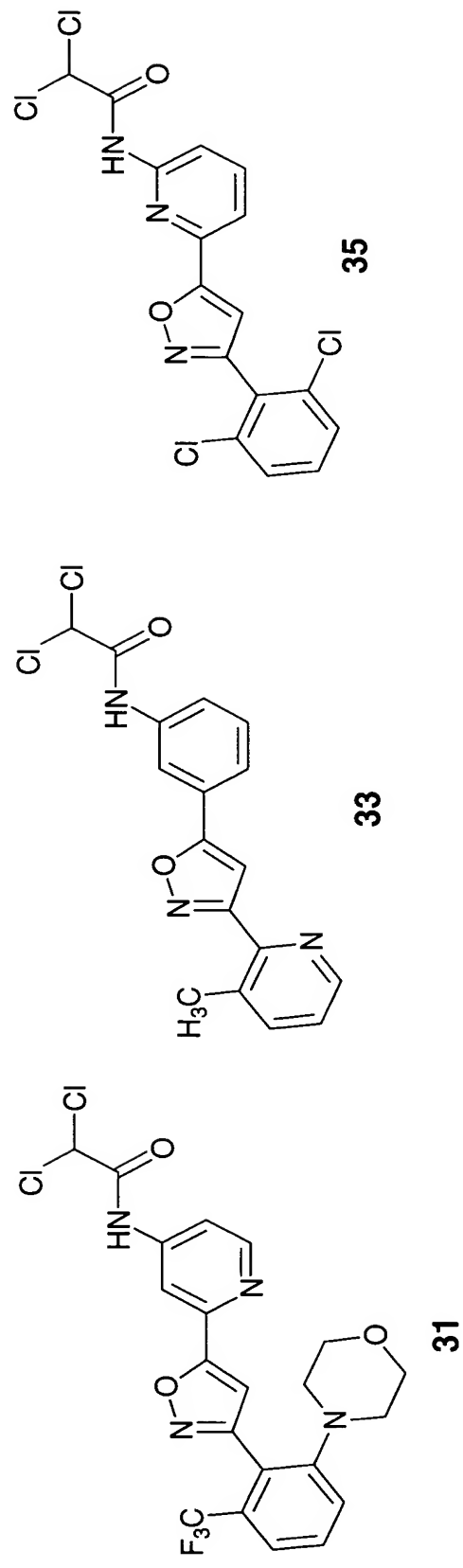
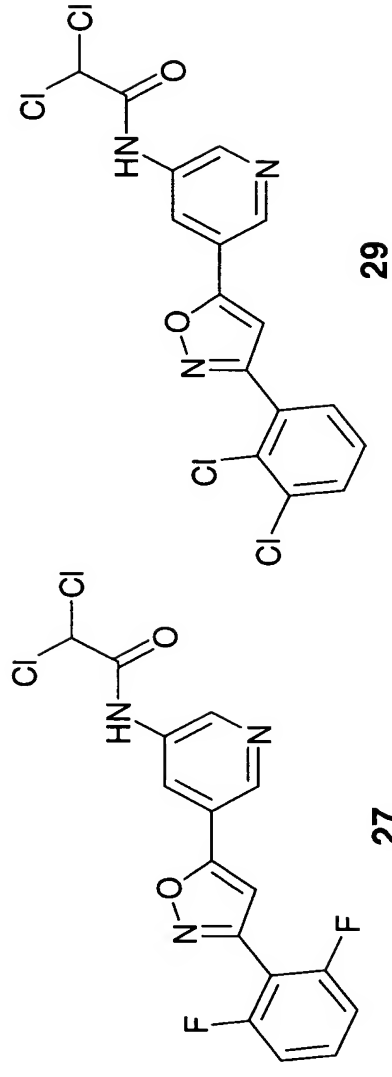


FIG. 1D

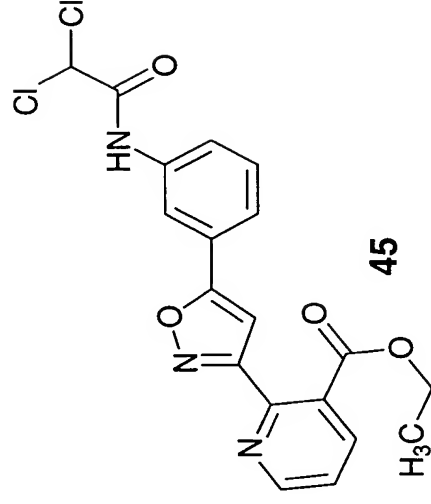
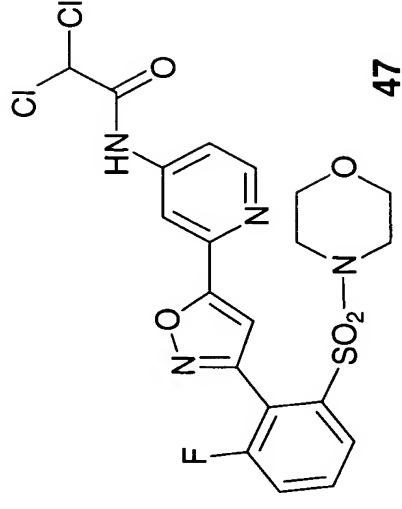
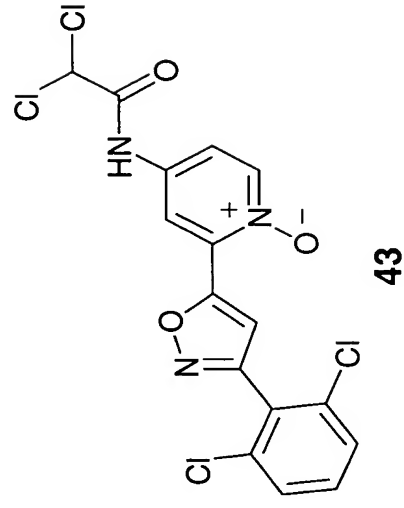
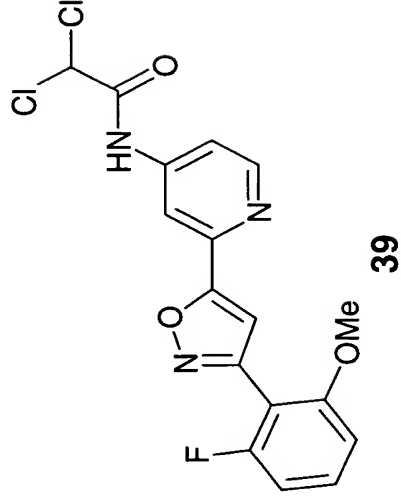
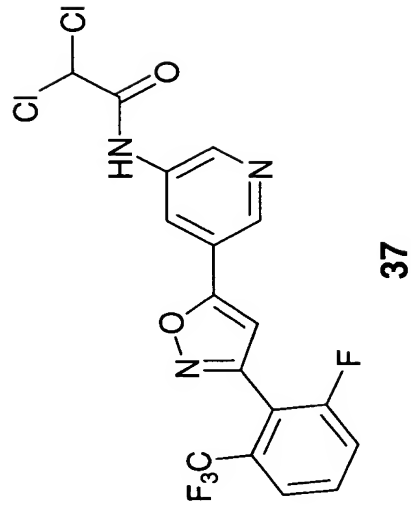


FIG. 1E

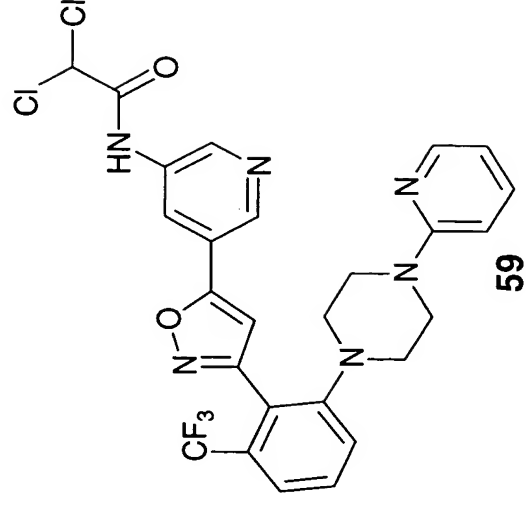
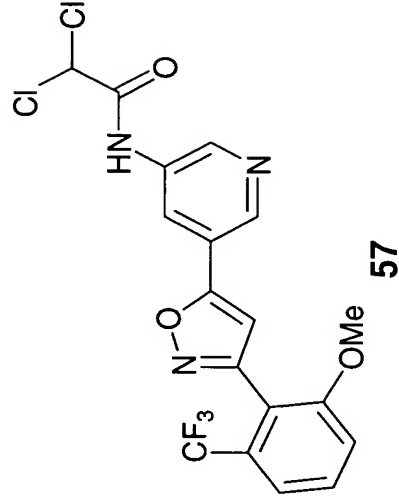
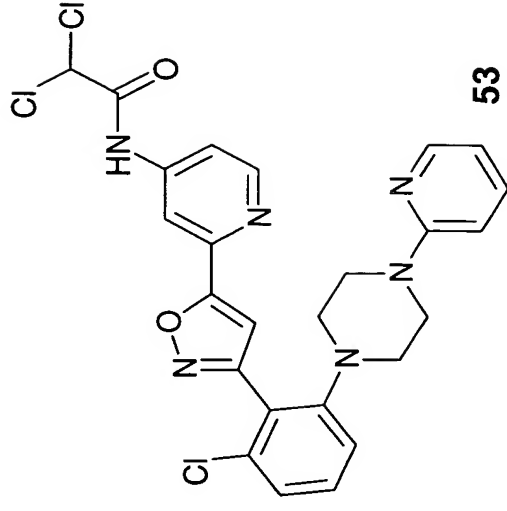
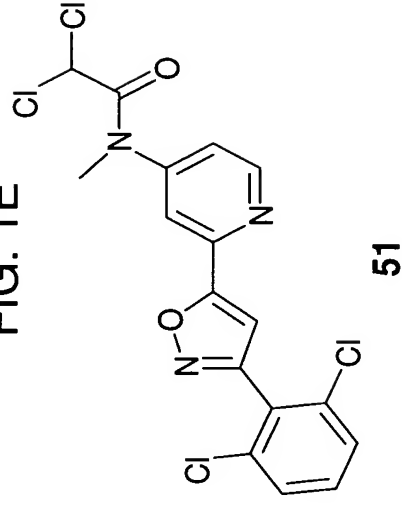
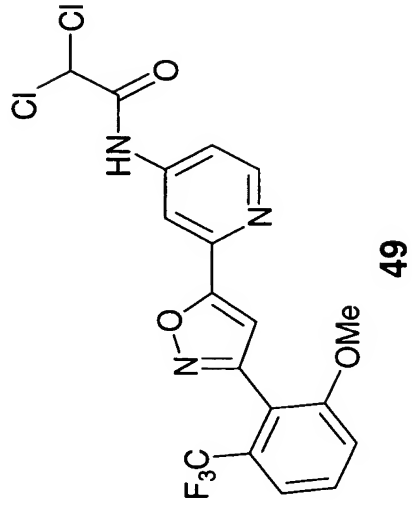


FIG. 1F

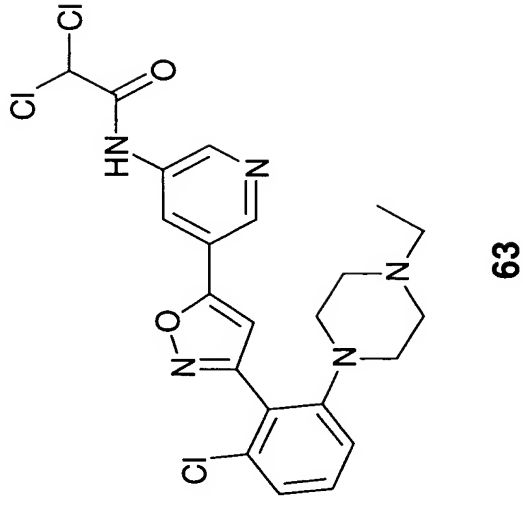
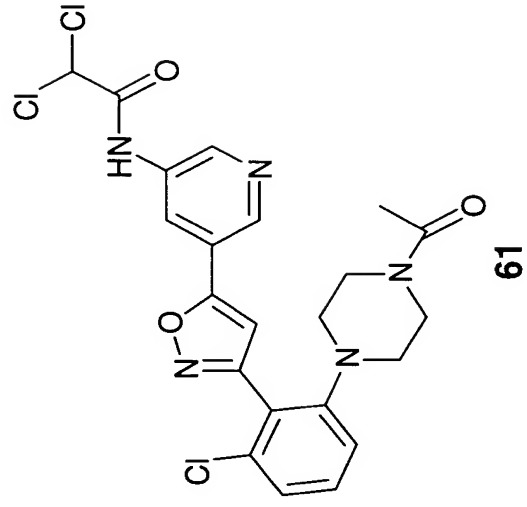


FIG. 2A

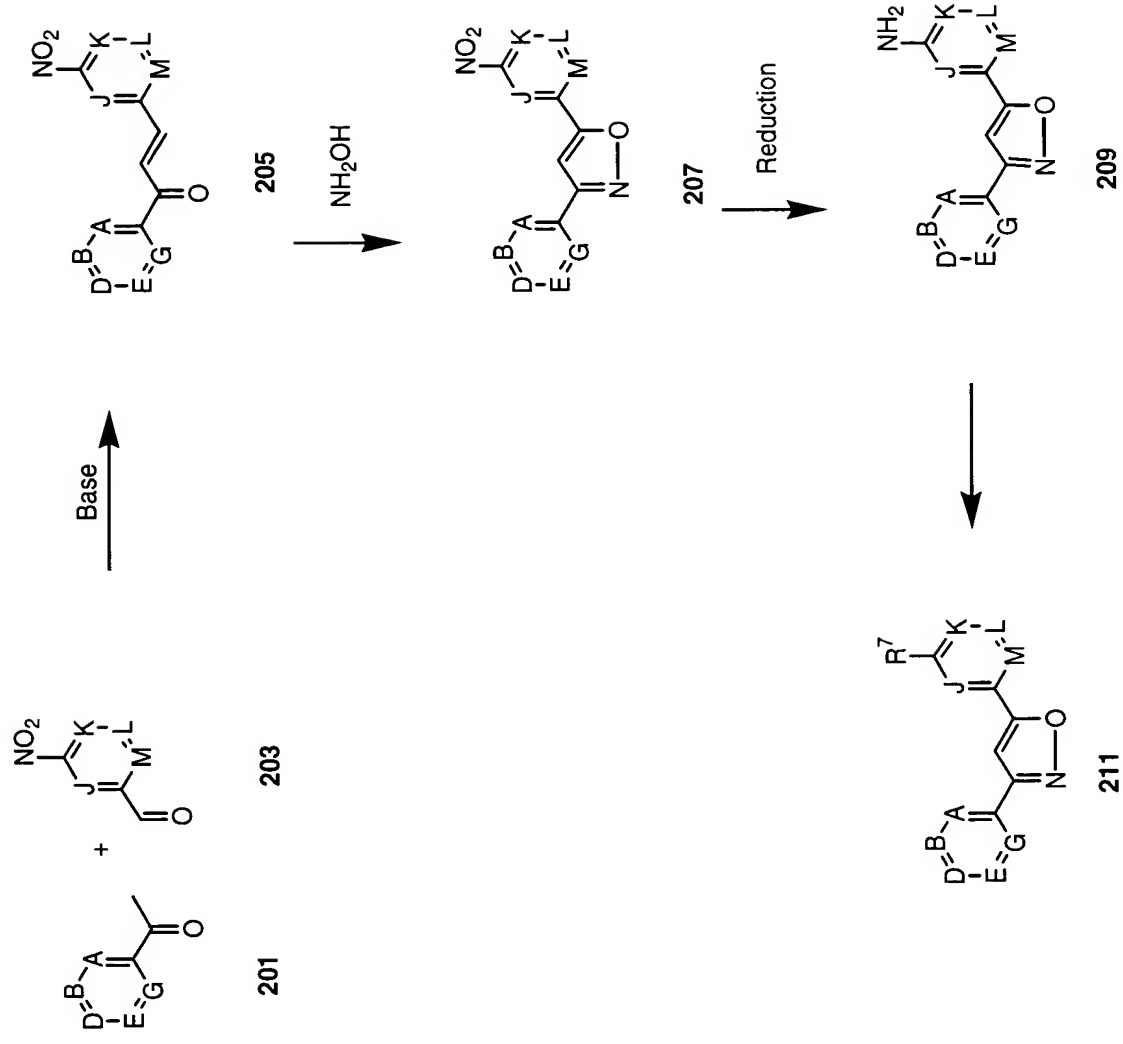


FIG. 2B

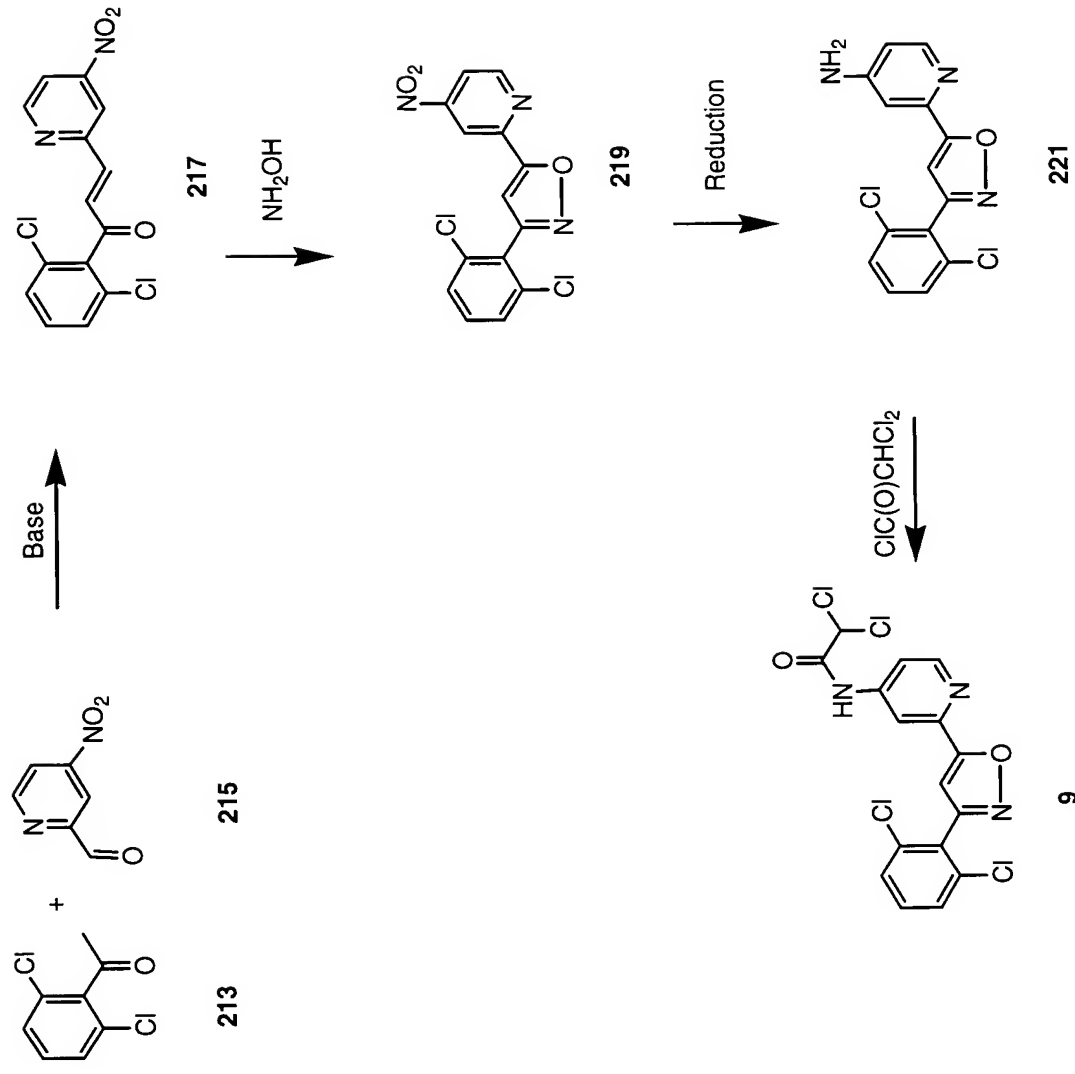




FIG. 3A

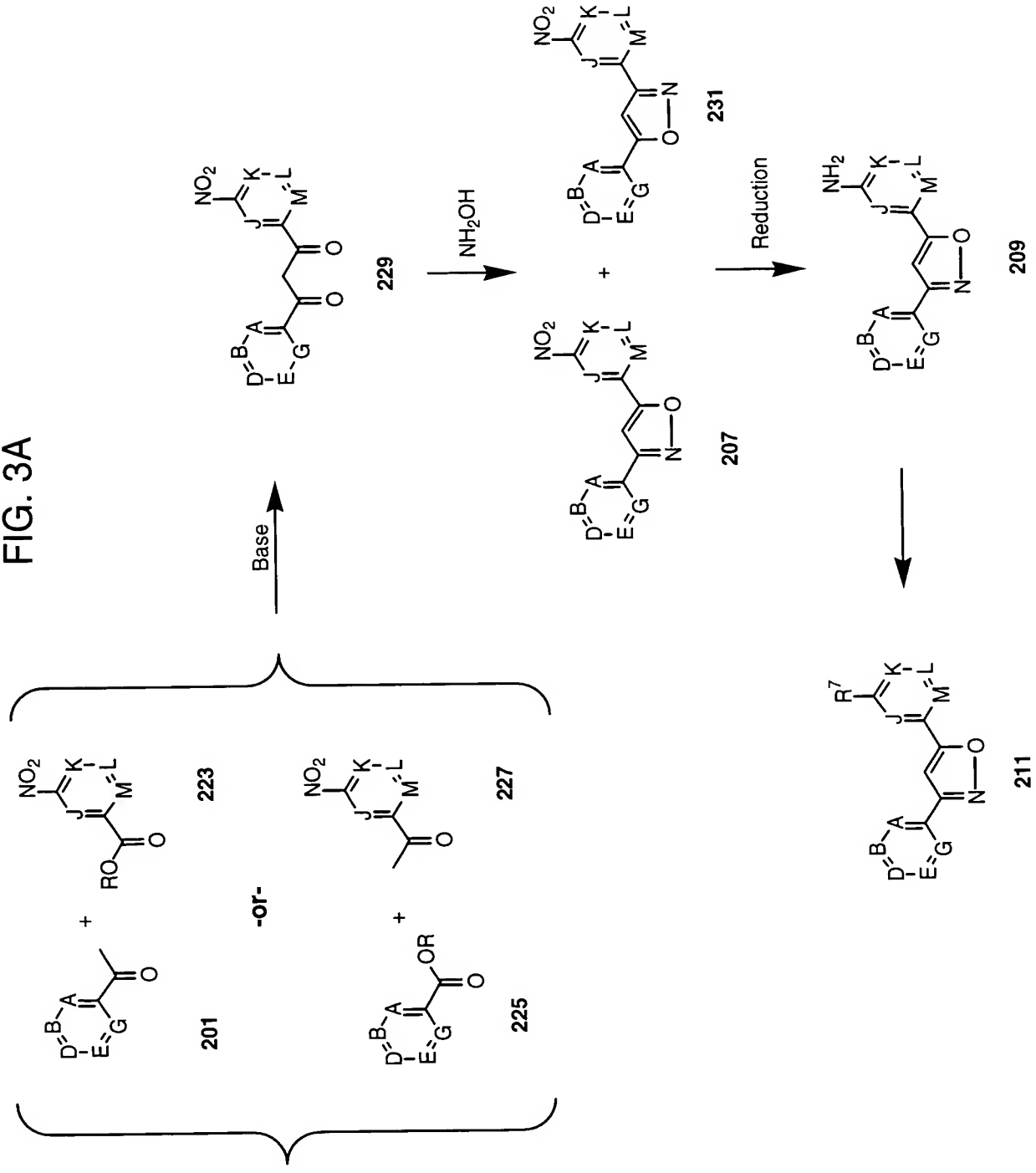


FIG. 3B

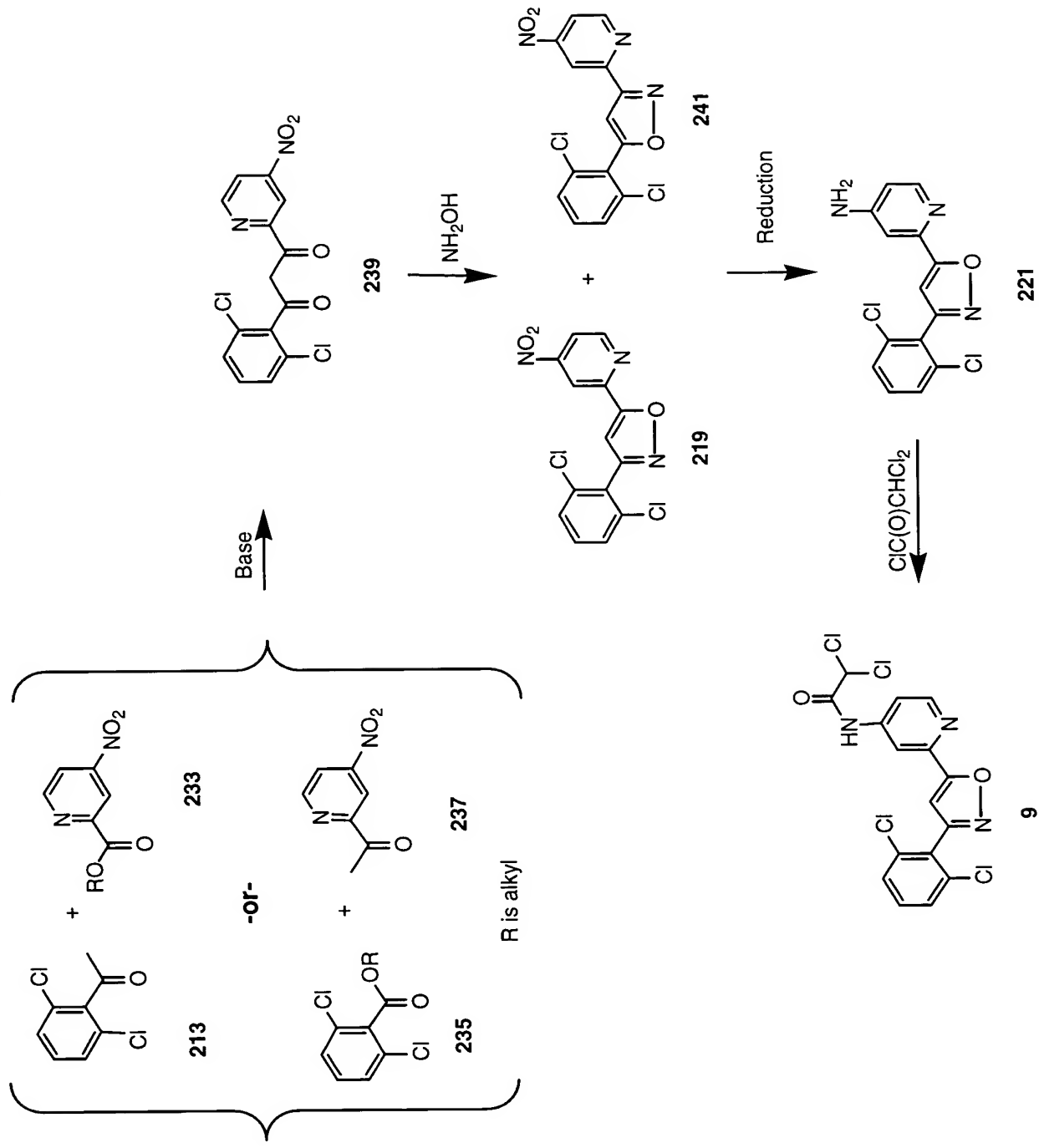


FIG. 4A

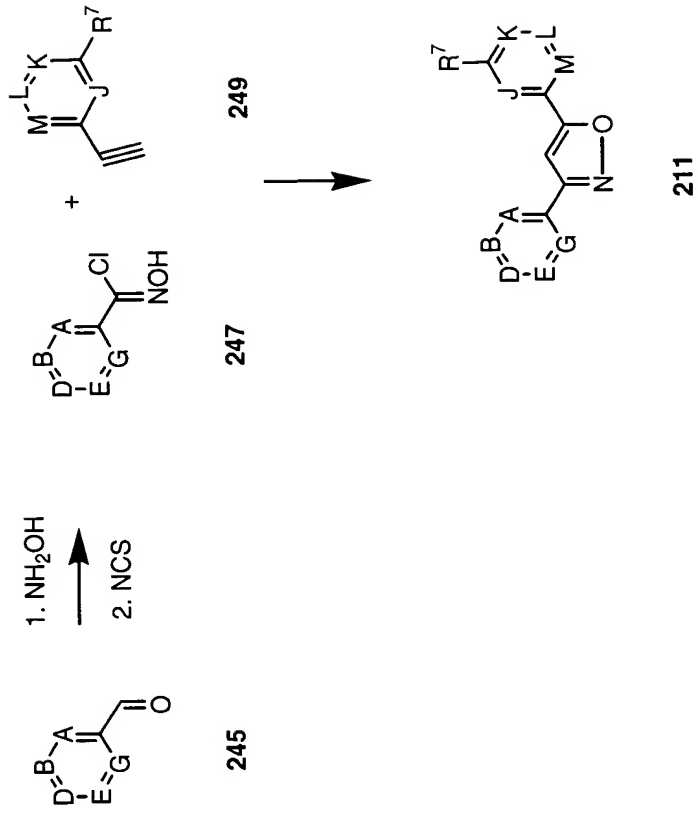


FIG. 4B

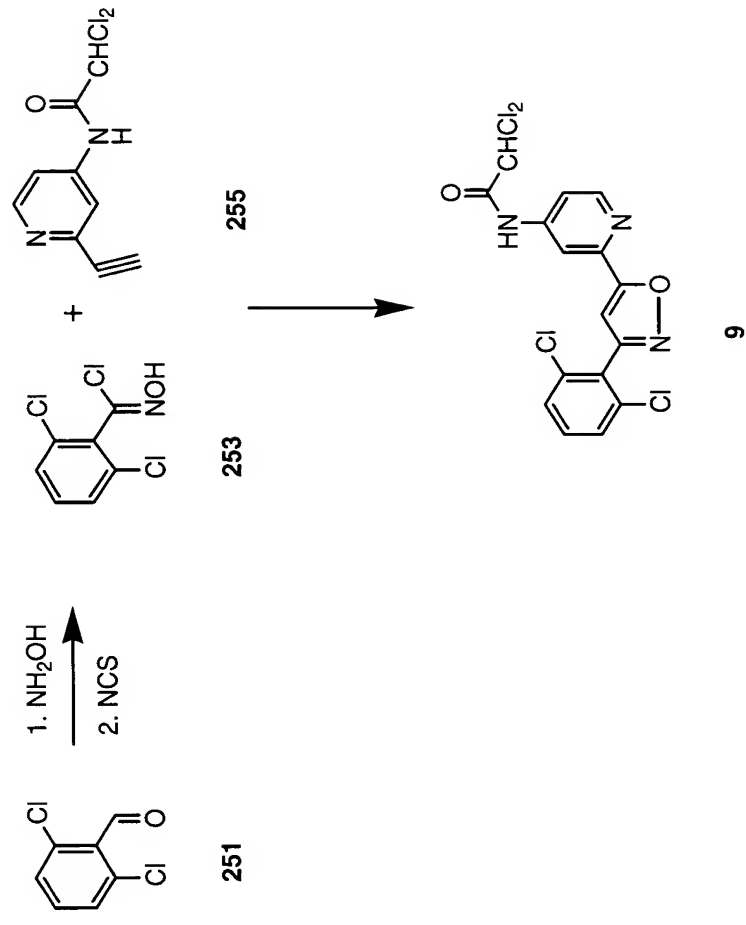


FIG. 4C

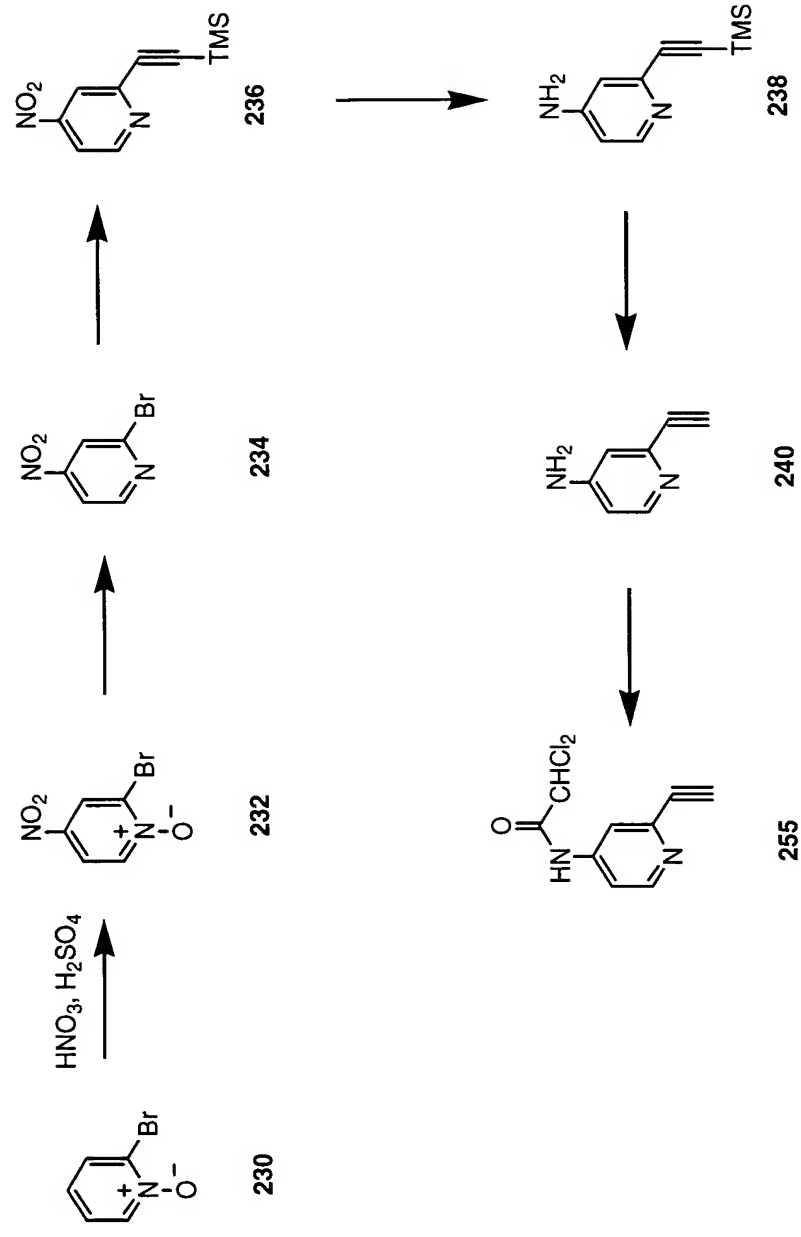


FIG. 4D

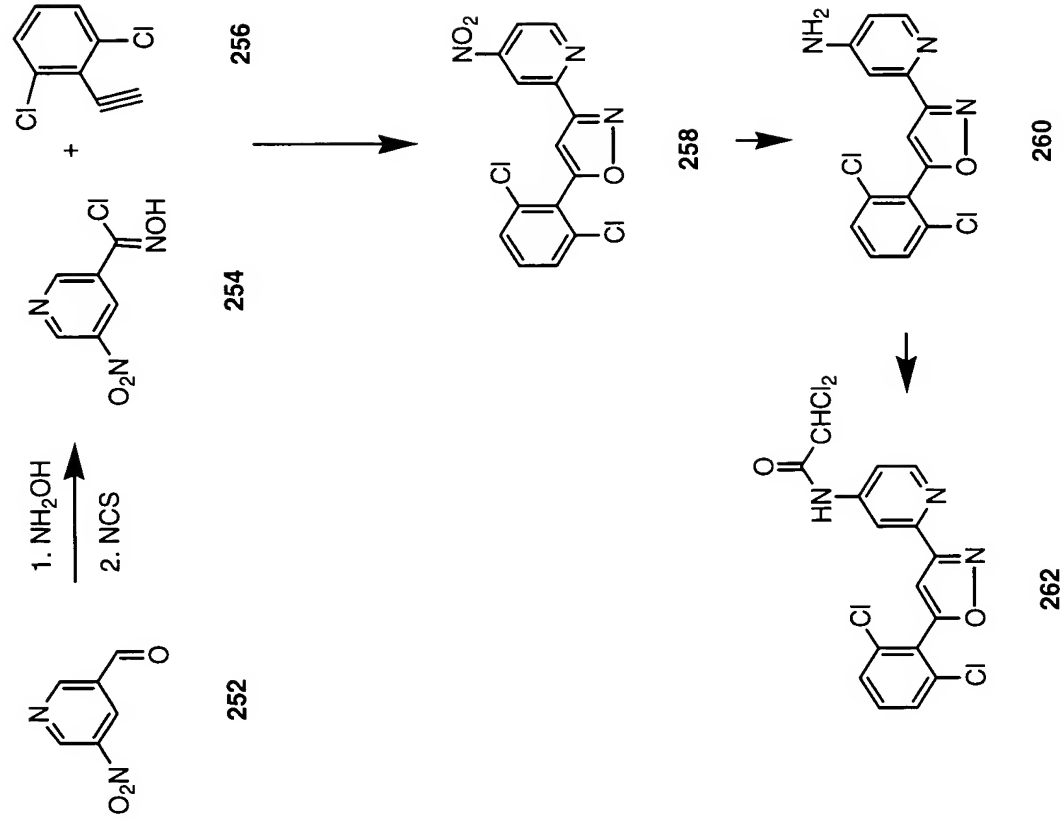


FIG. 5A

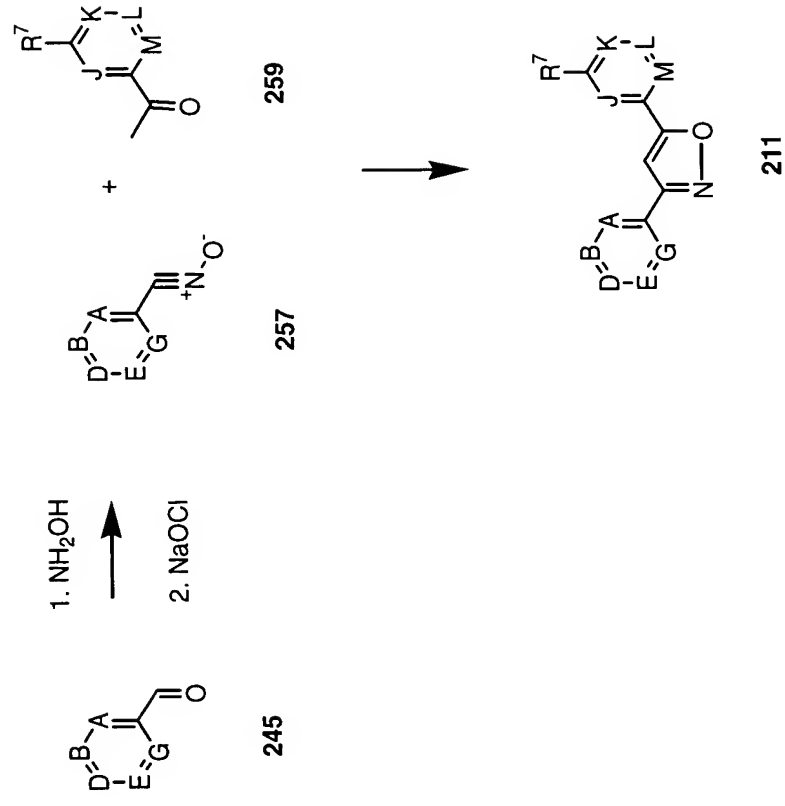


FIG. 5B

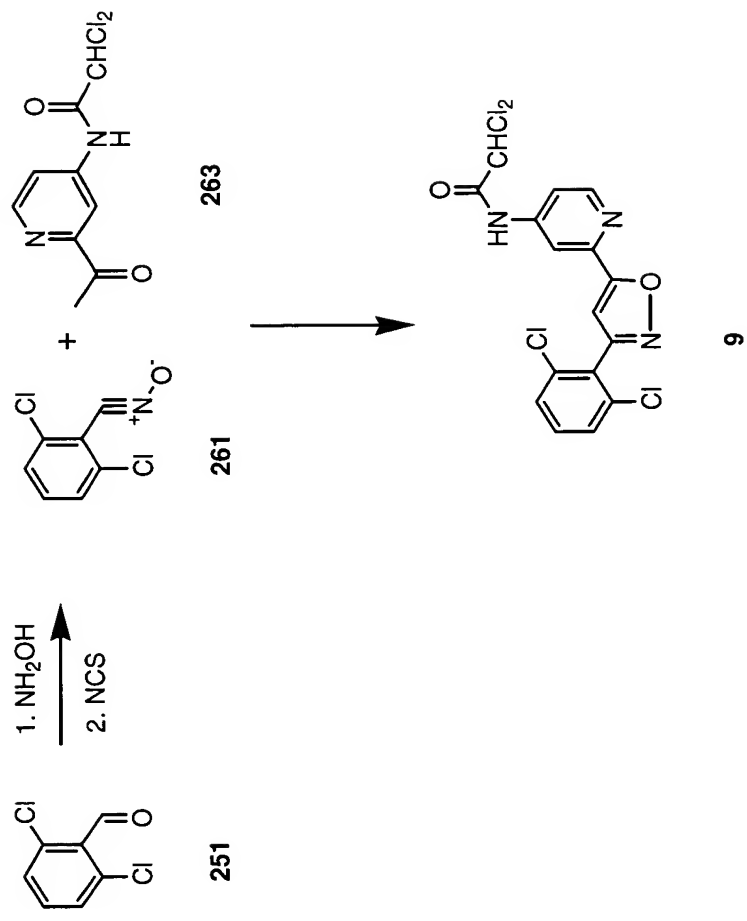




FIG. 6A

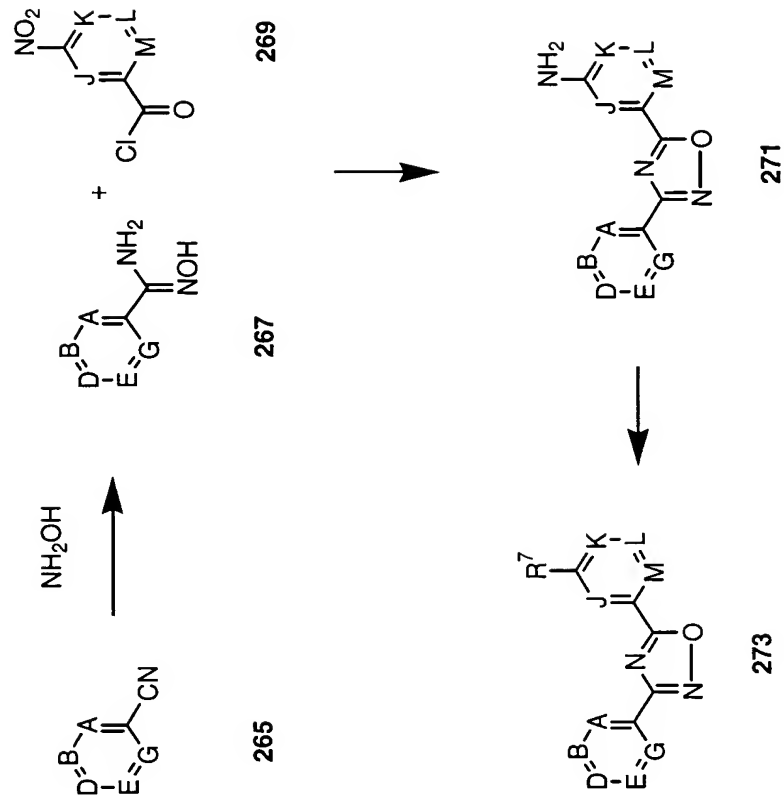


FIG. 6B

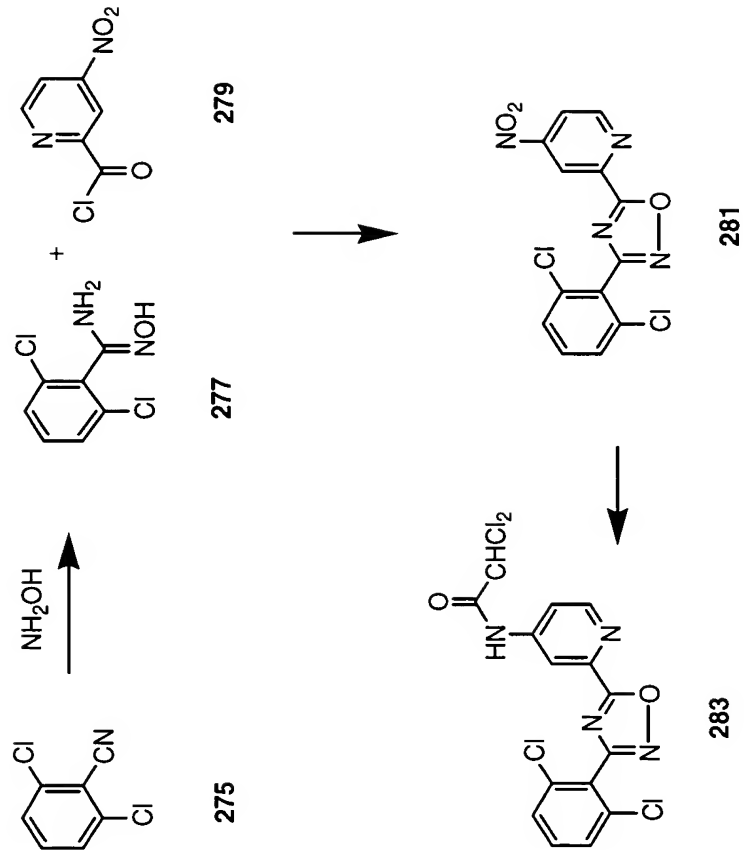


FIG. 7A

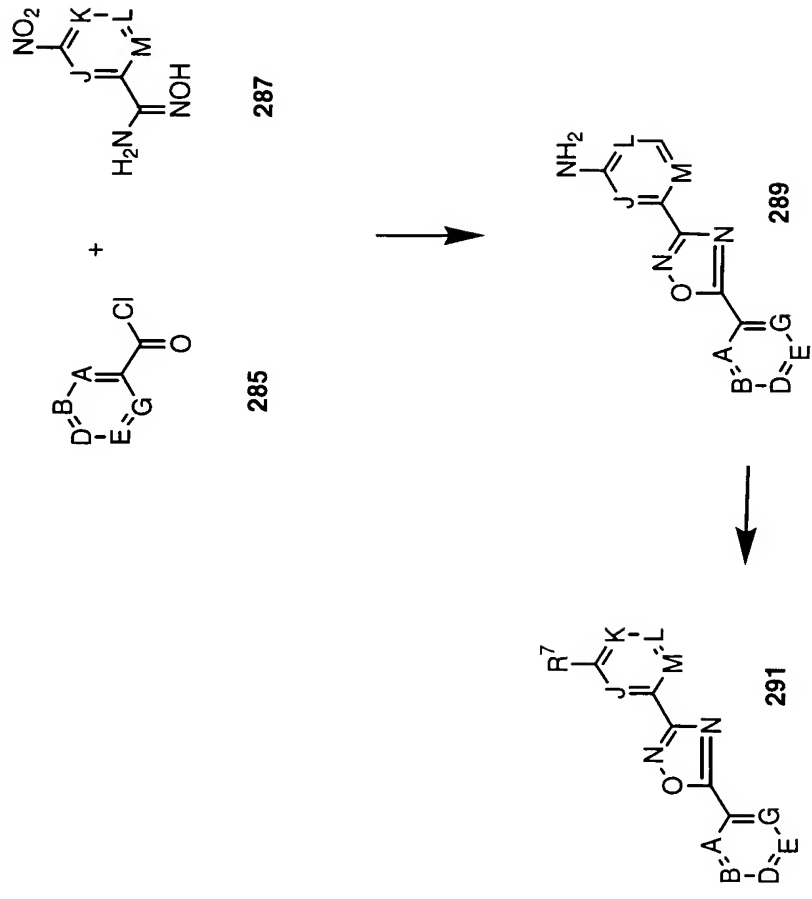


FIG. 7B

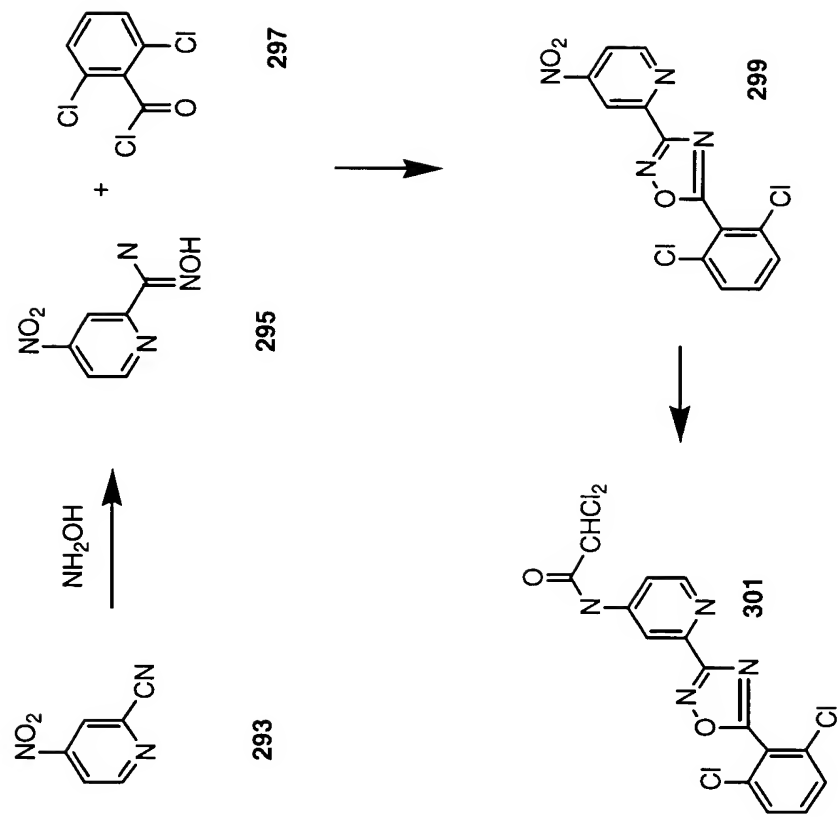


FIG. 8A

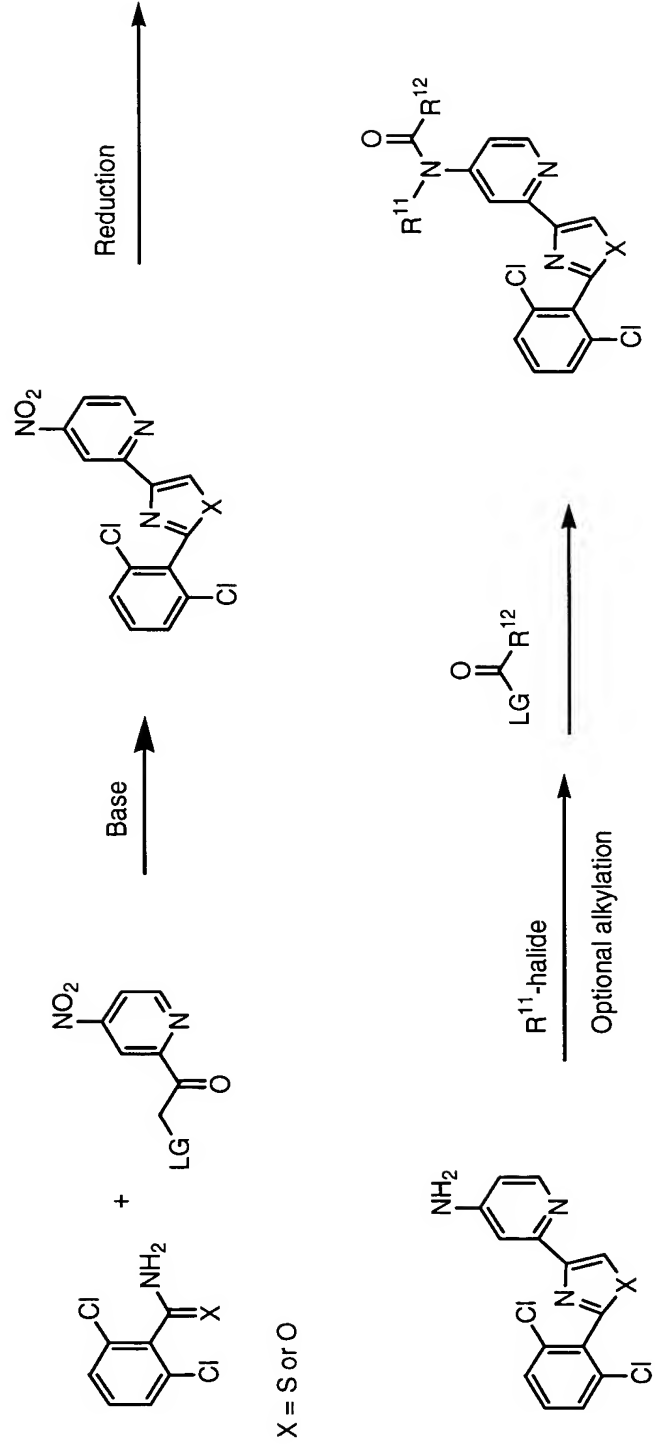


FIG. 8B

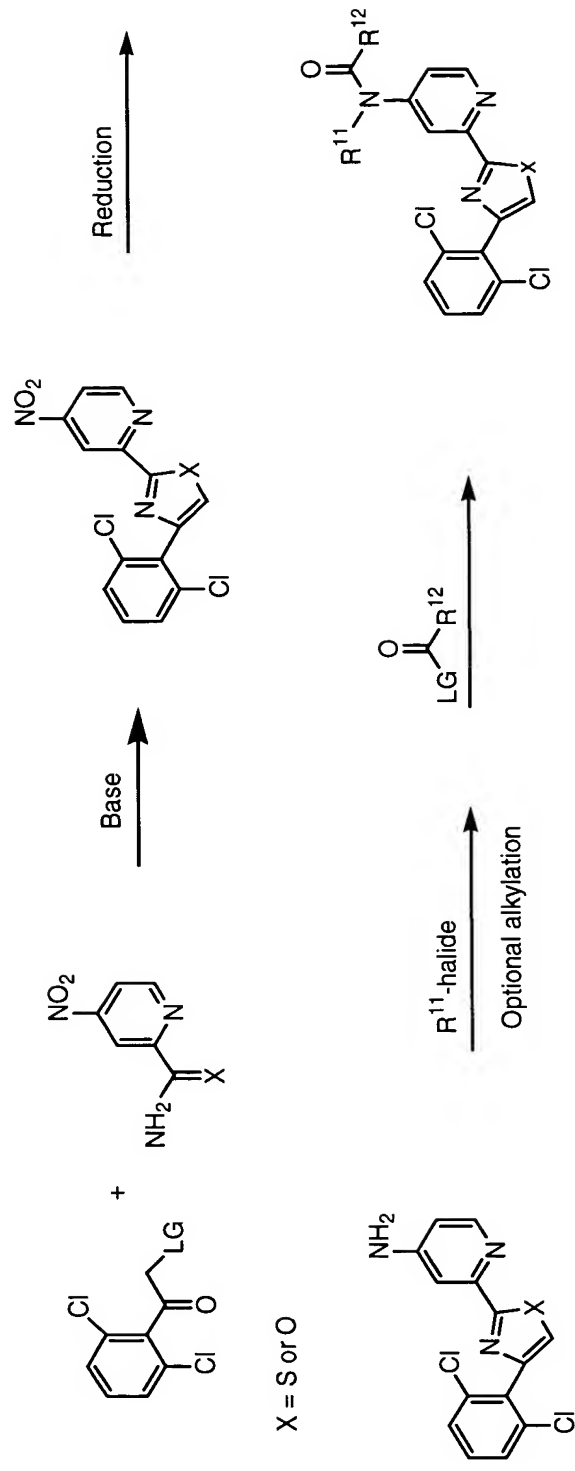


FIG. 9A

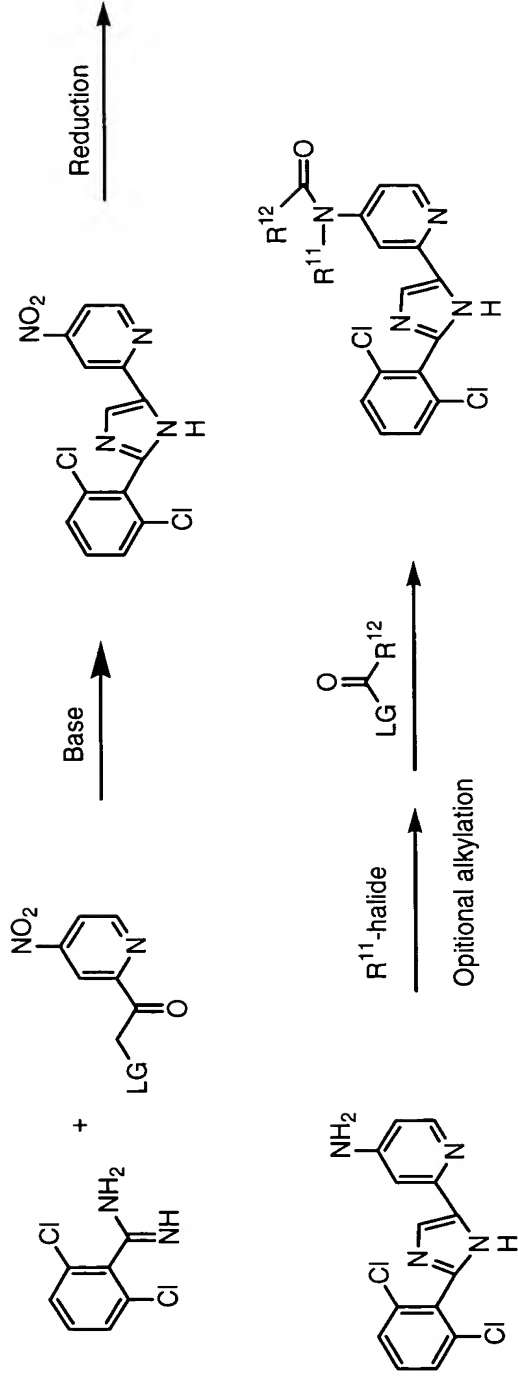


FIG. 9B

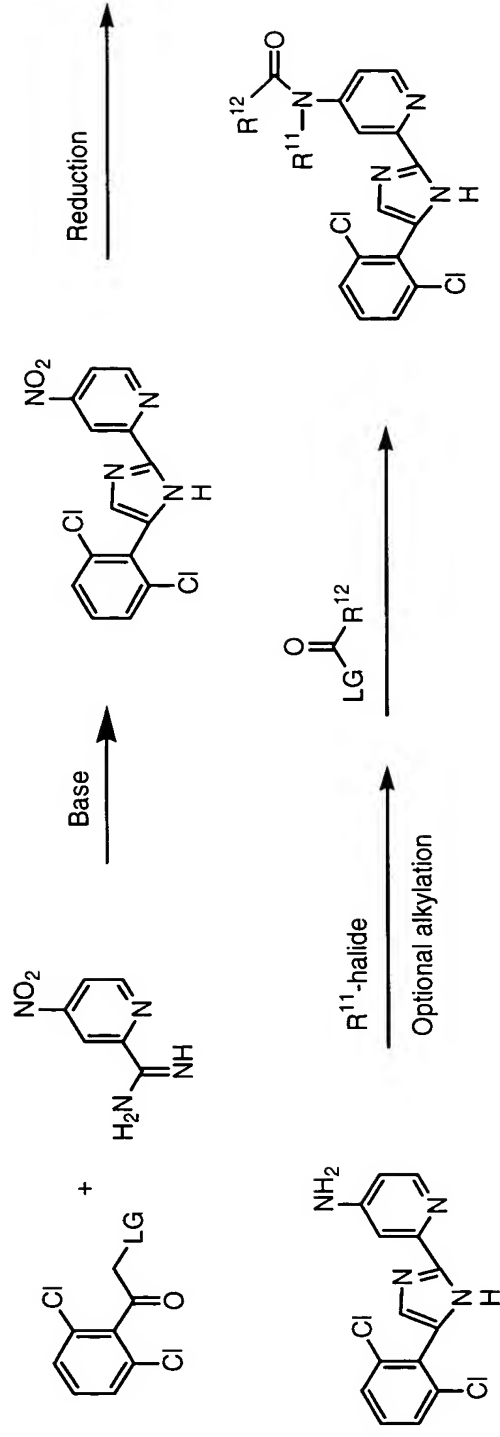




FIG. 10A

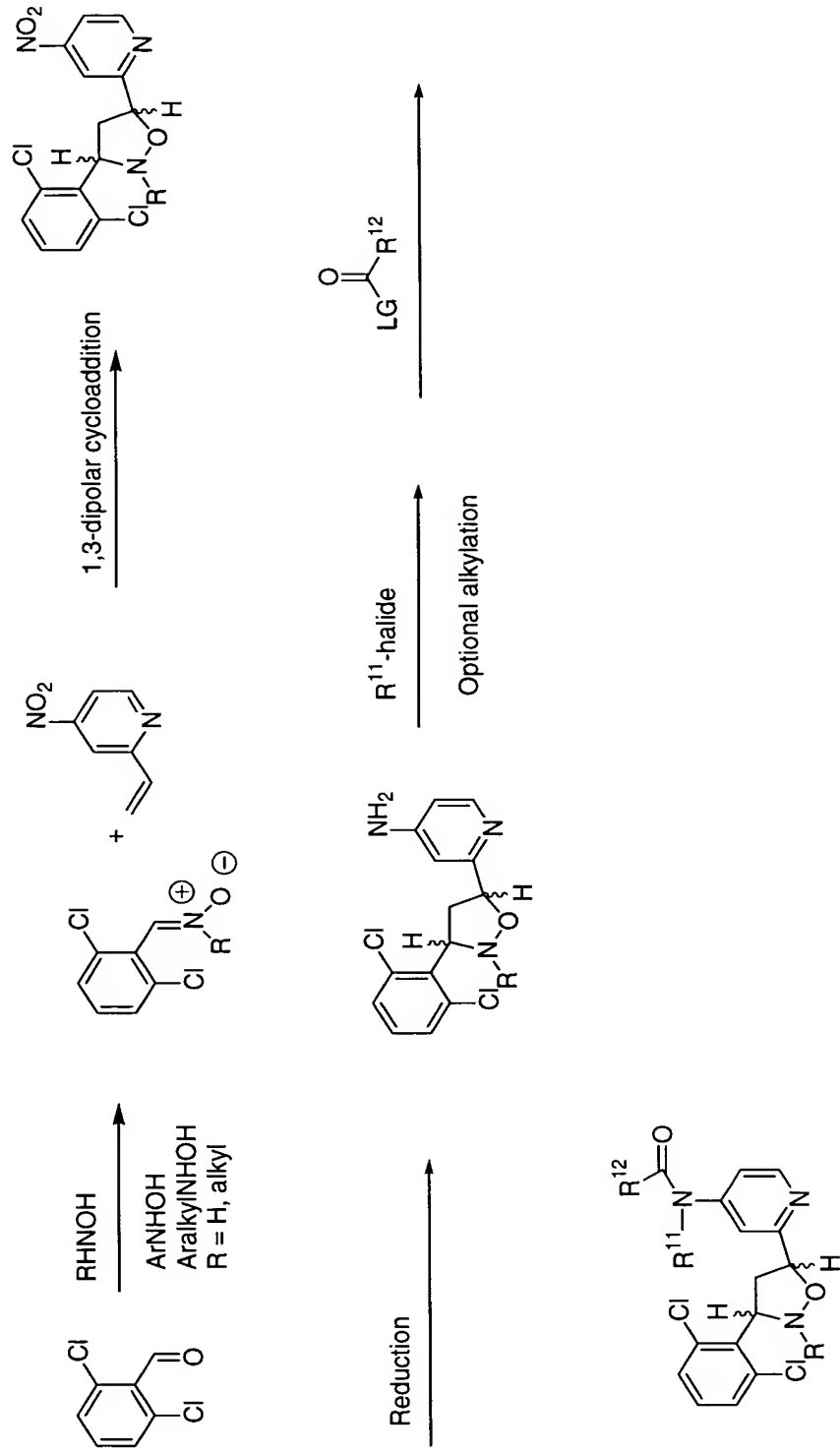


FIG. 10B

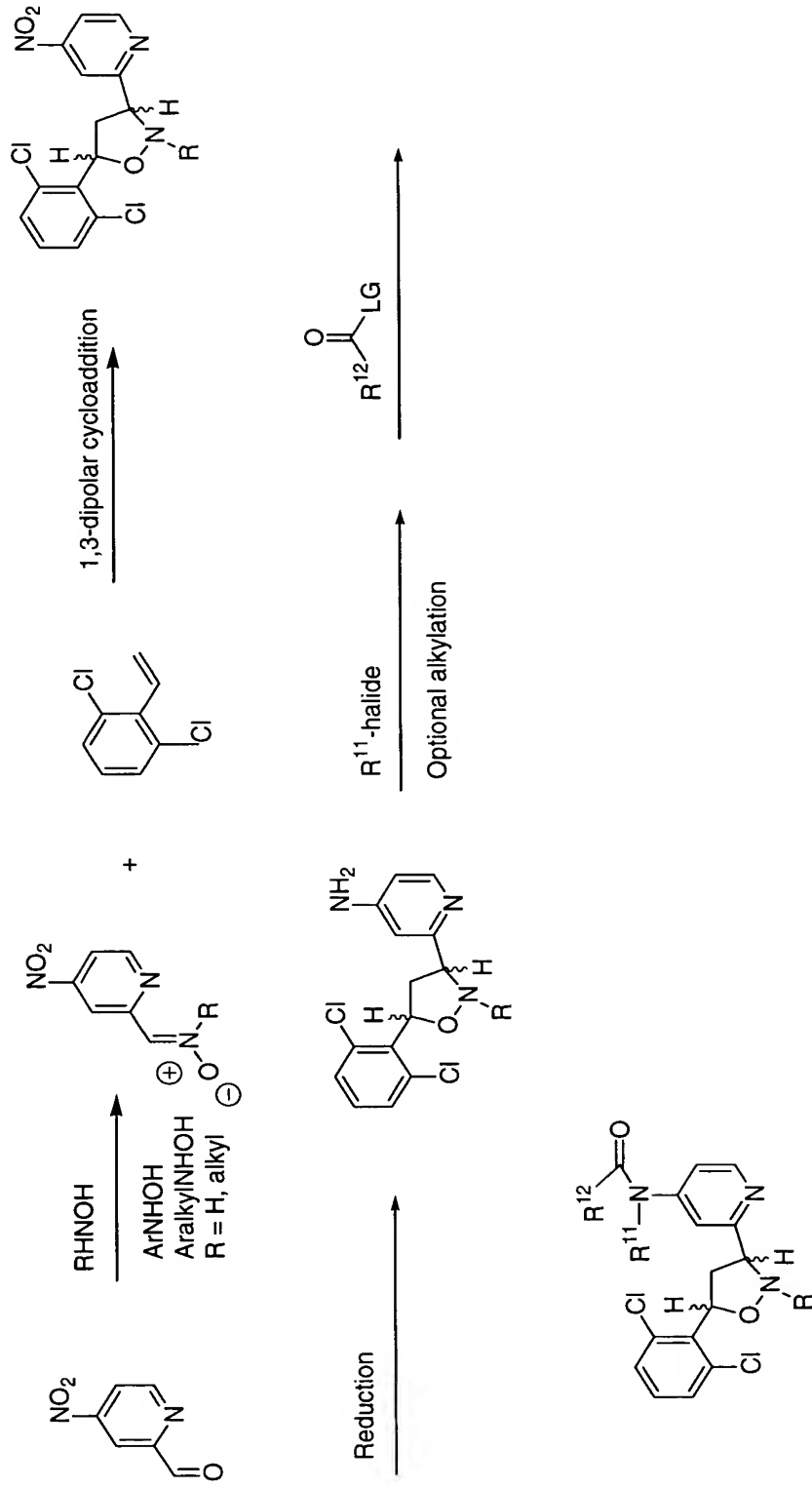


FIG. 11A

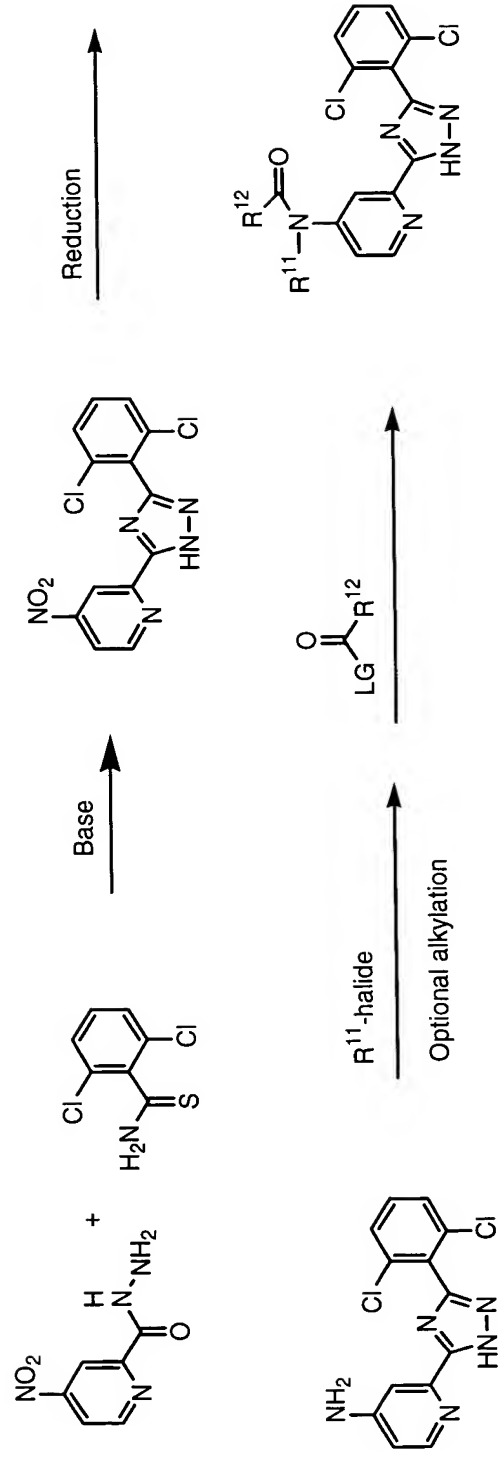


FIG. 11B

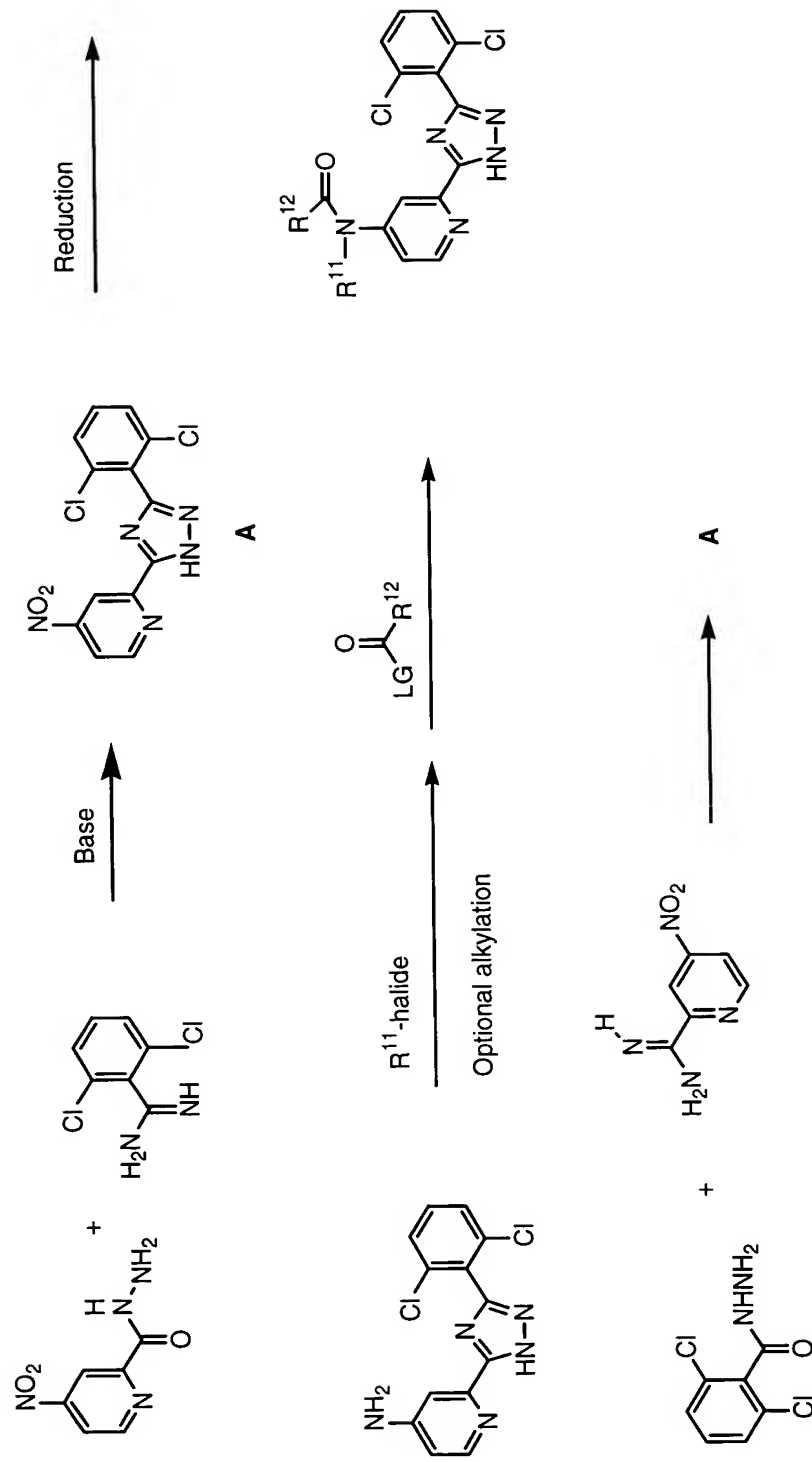


FIG. 12A

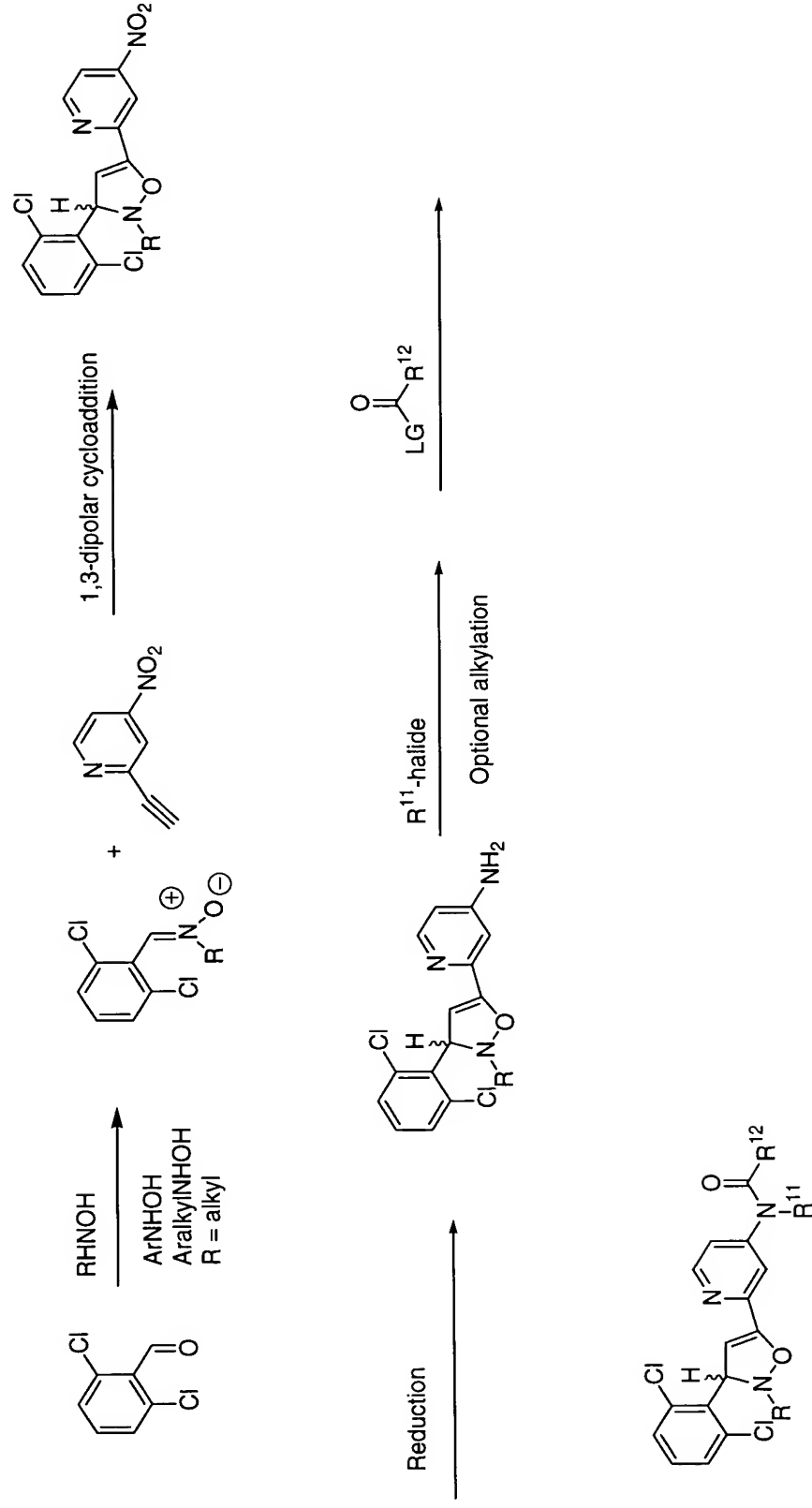


FIG. 12B

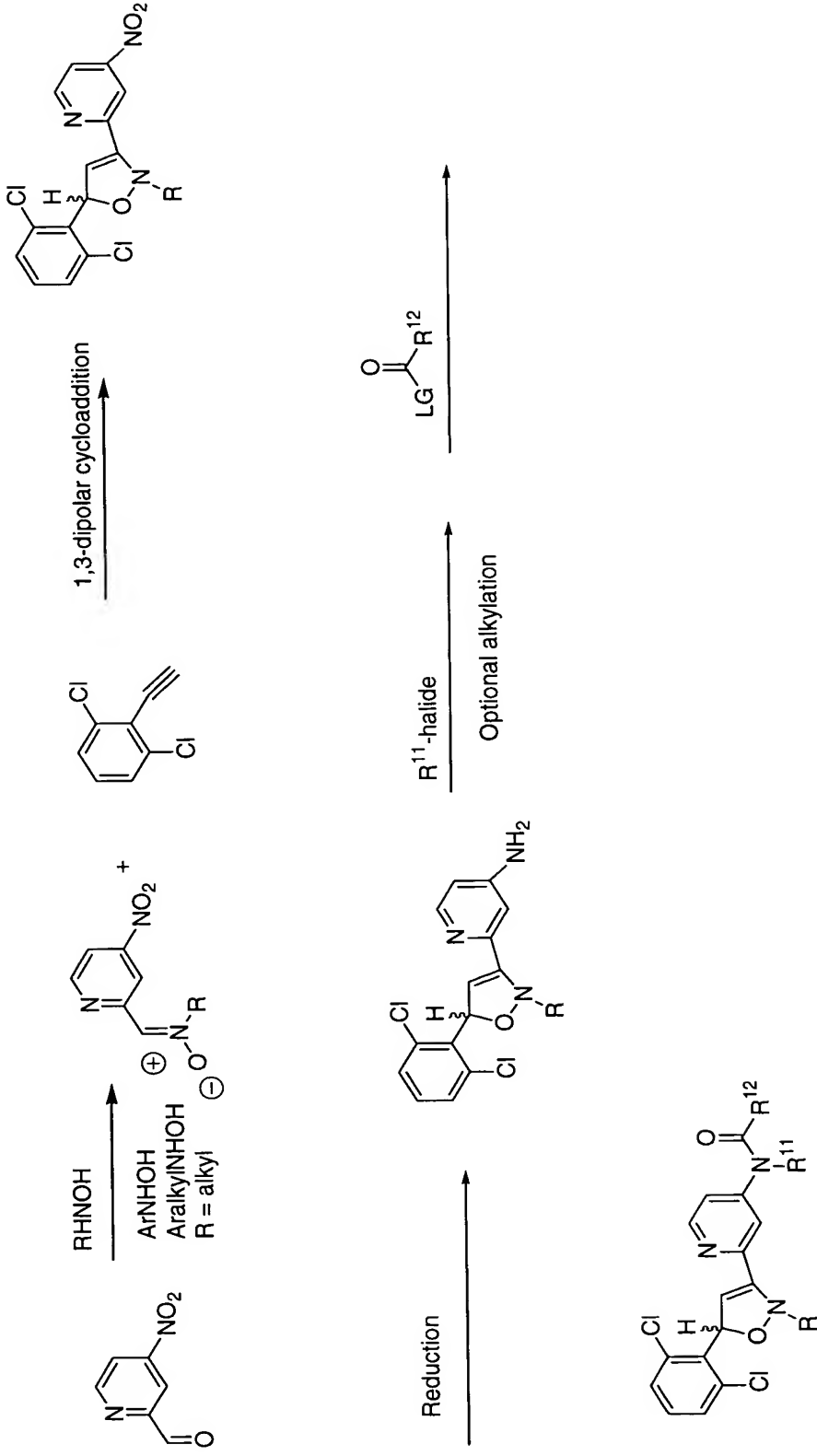


FIG. 12C

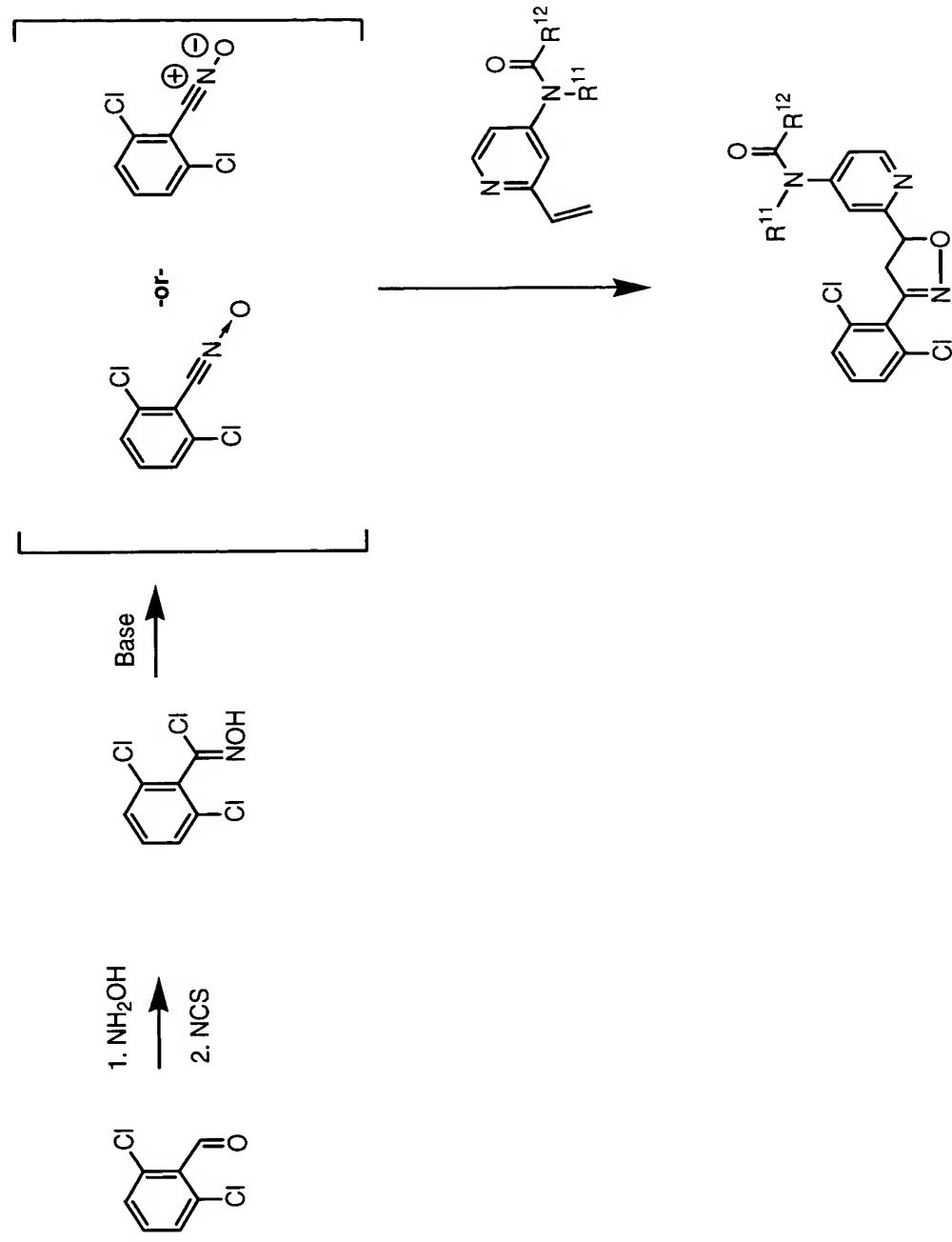
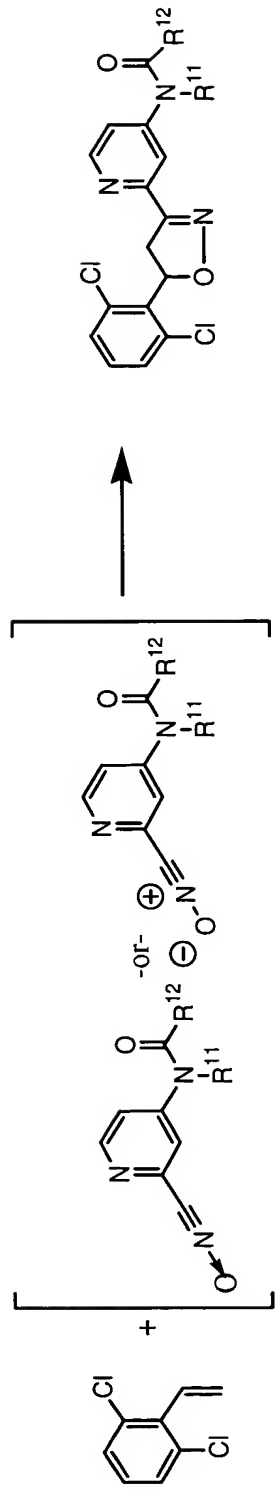


FIG. 12D





**FIG. 12E**

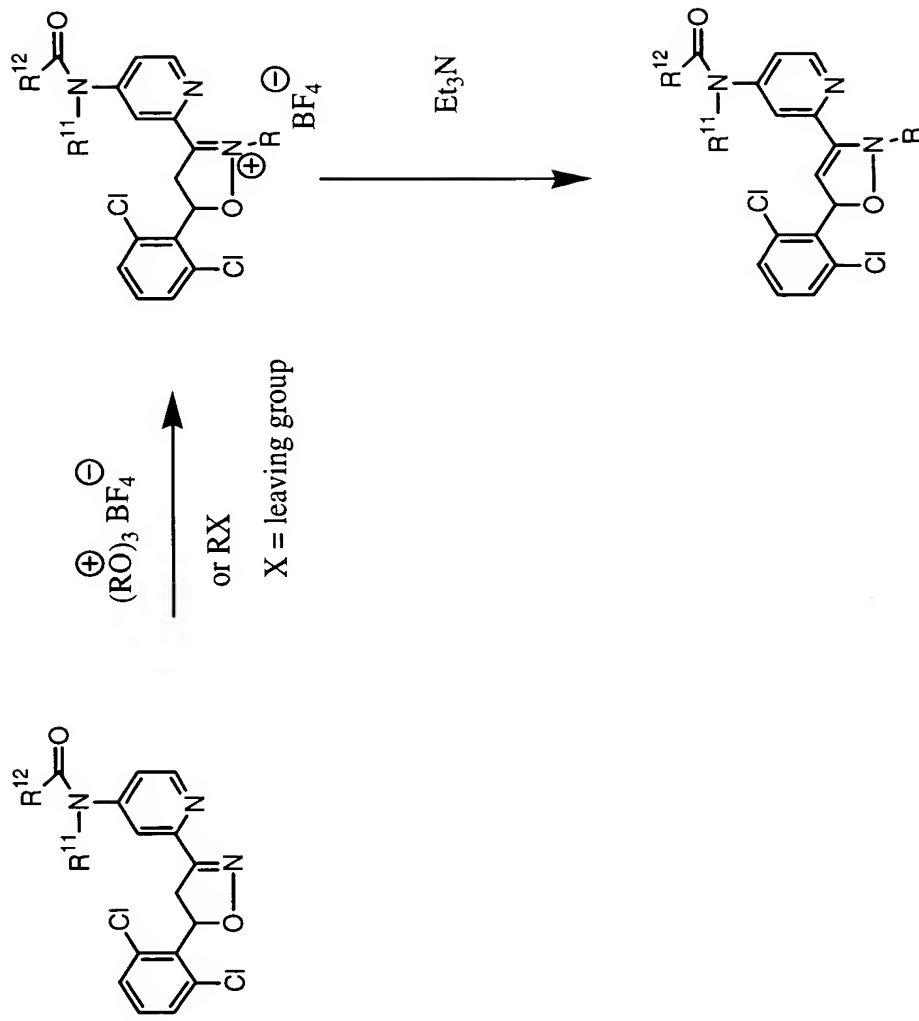


FIG. 13

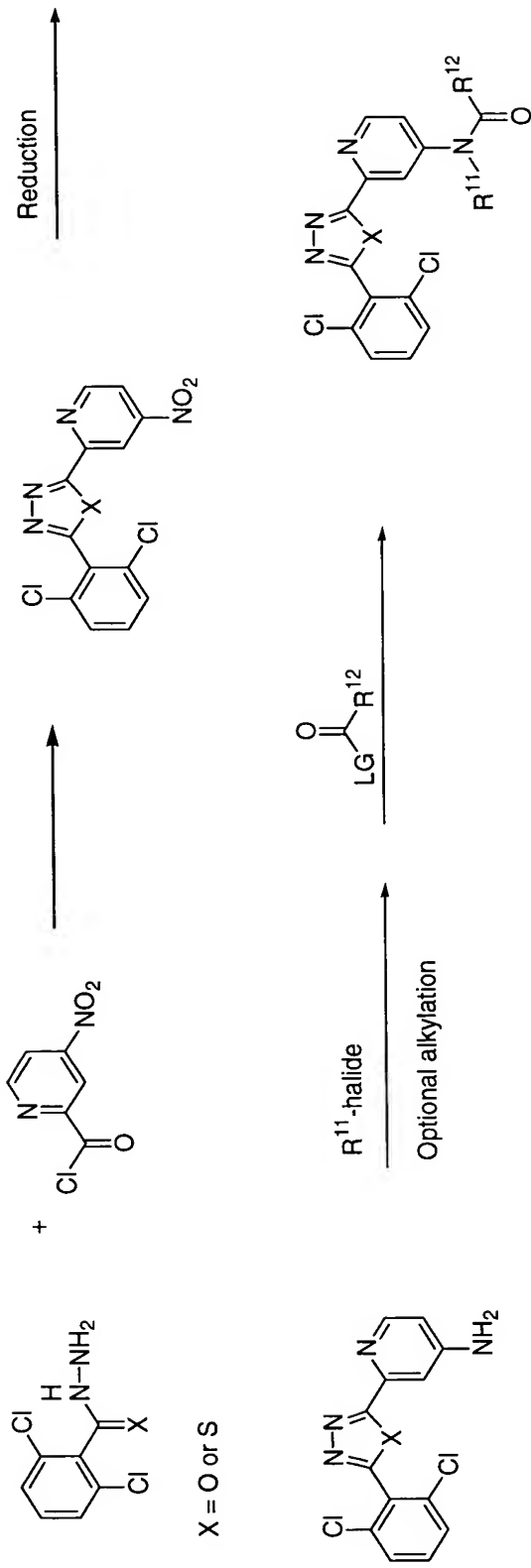


FIG. 14

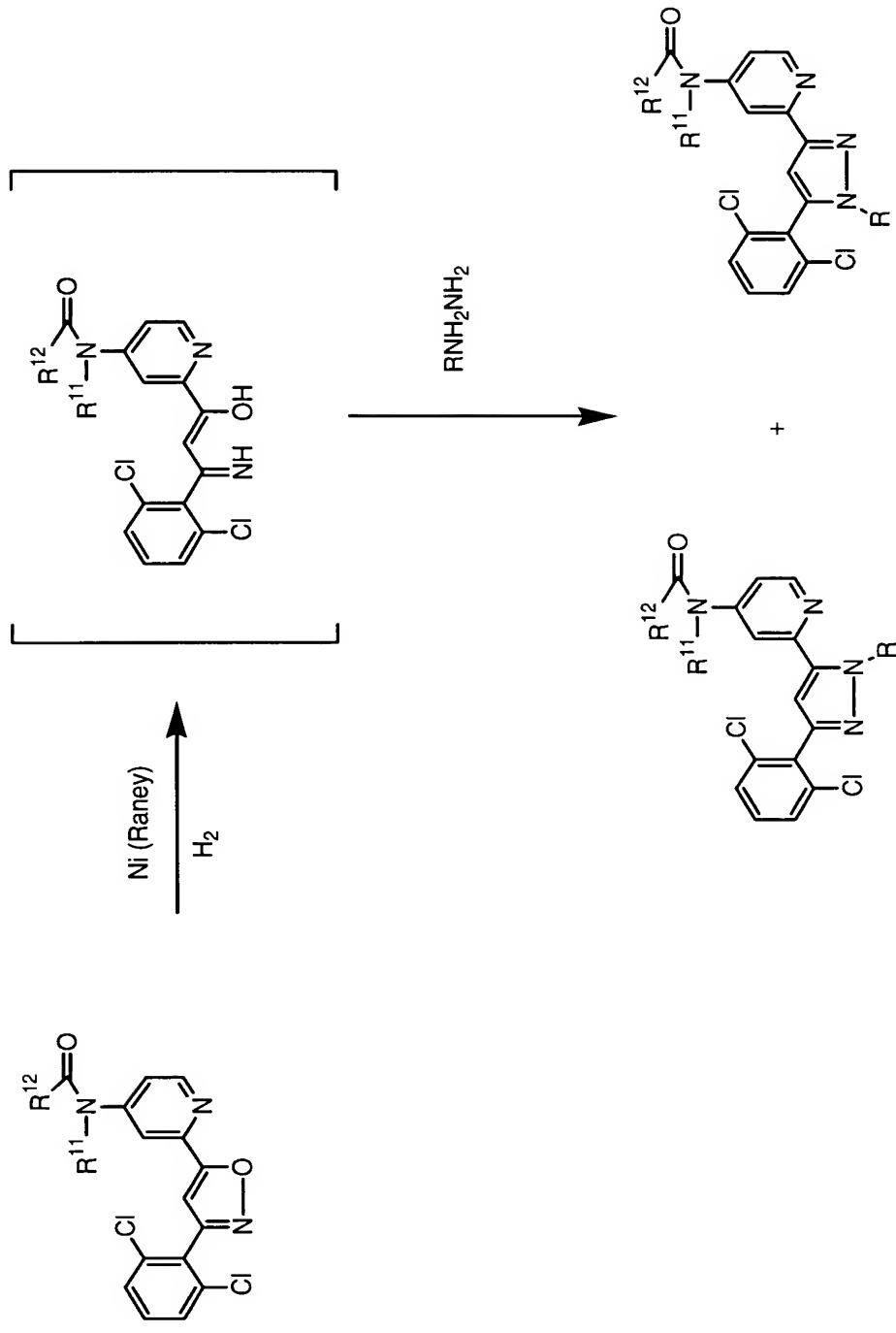
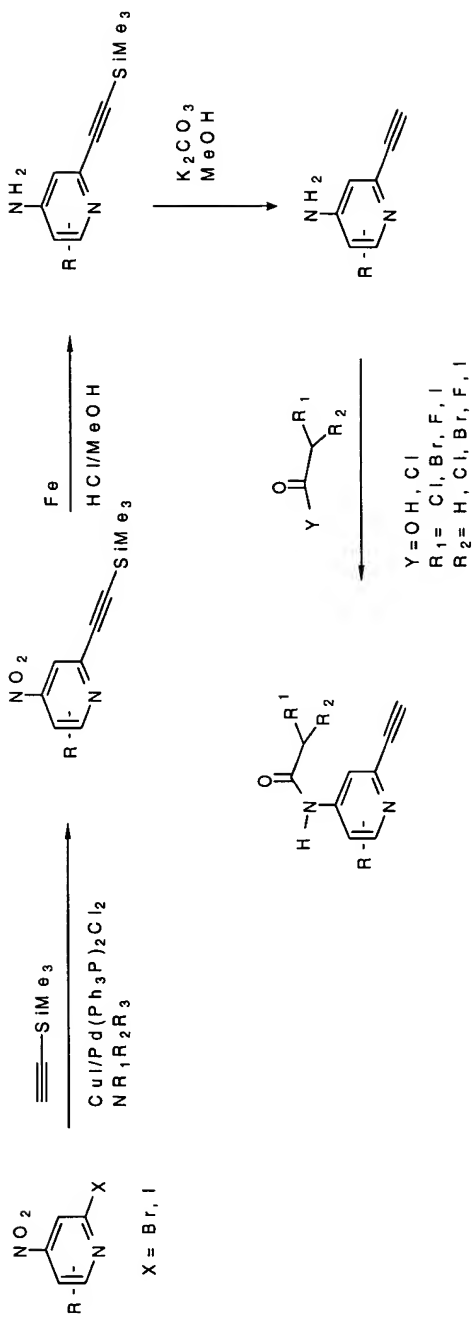


Figure 15

Method F



Method G

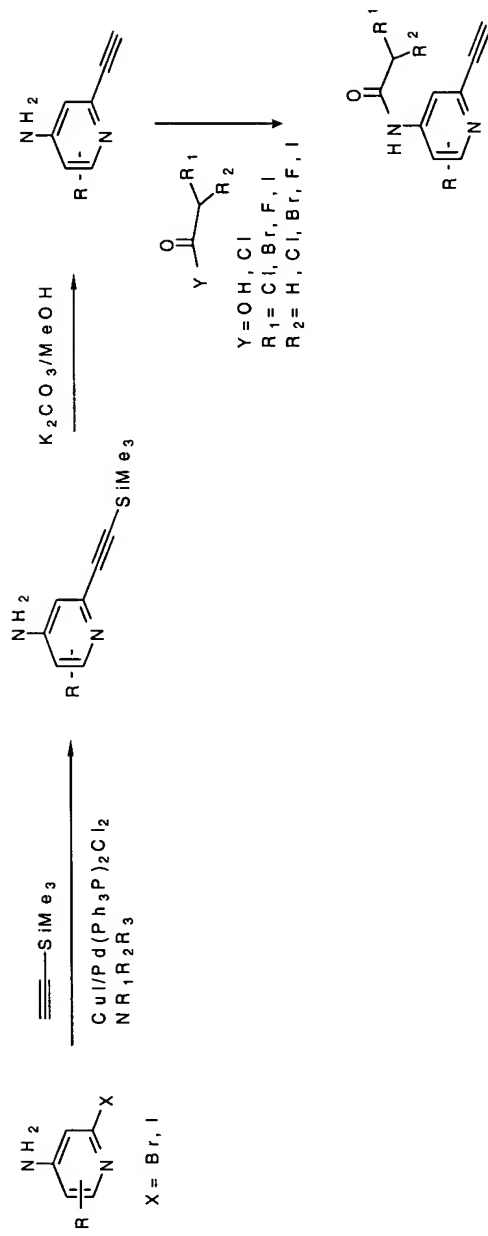
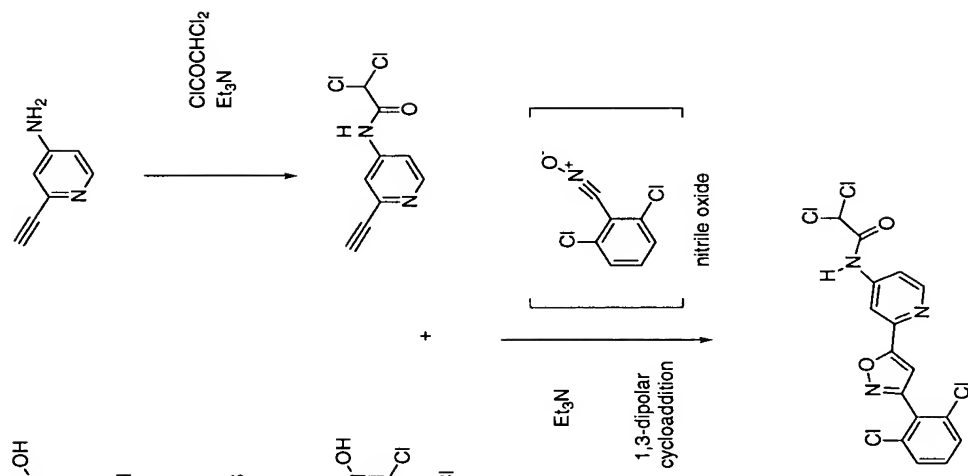


Figure 16  
Para C-ring phenyl isomer - isoxazole series



Method H

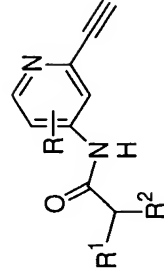
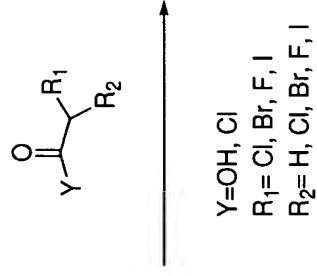
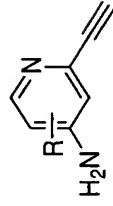


Figure 17

Figure 18  
Reverse meta-isoxazole

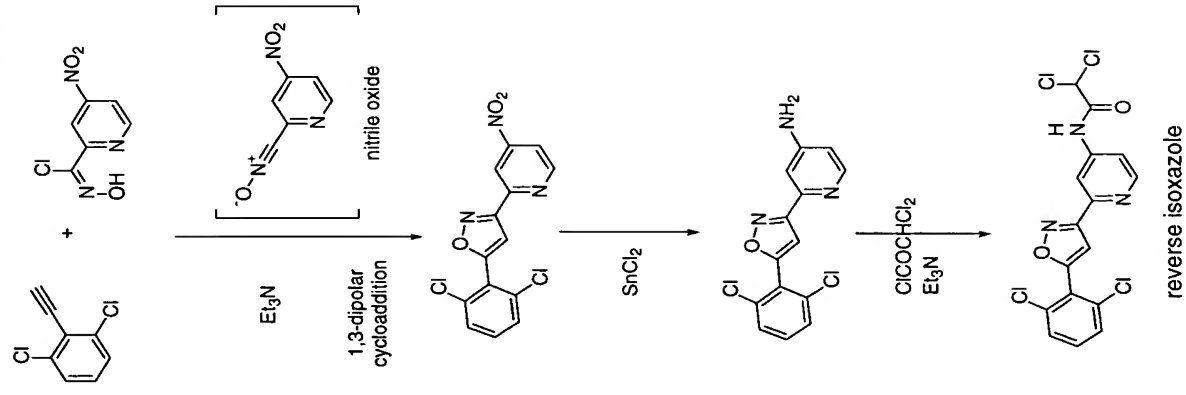


Figure 19  
Reverse 2-isoxazoline

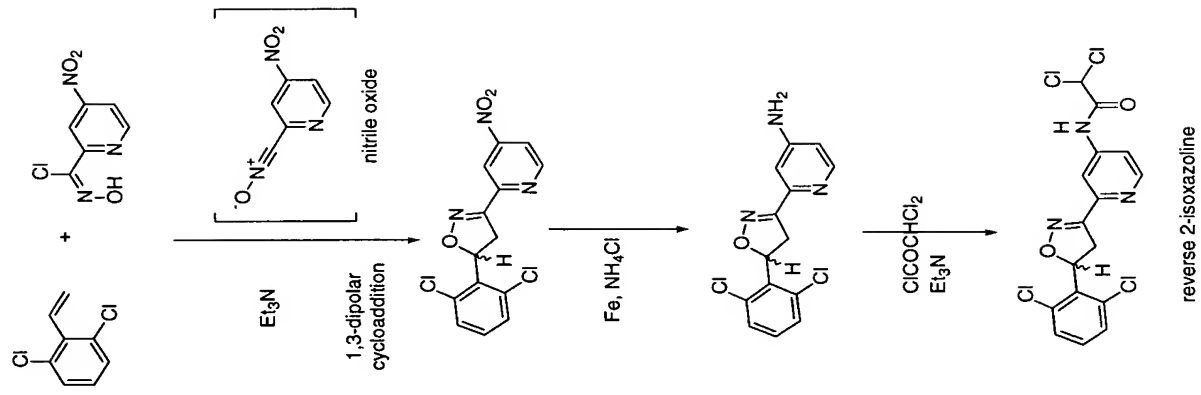




Figure 20  
2-Isoxazoline

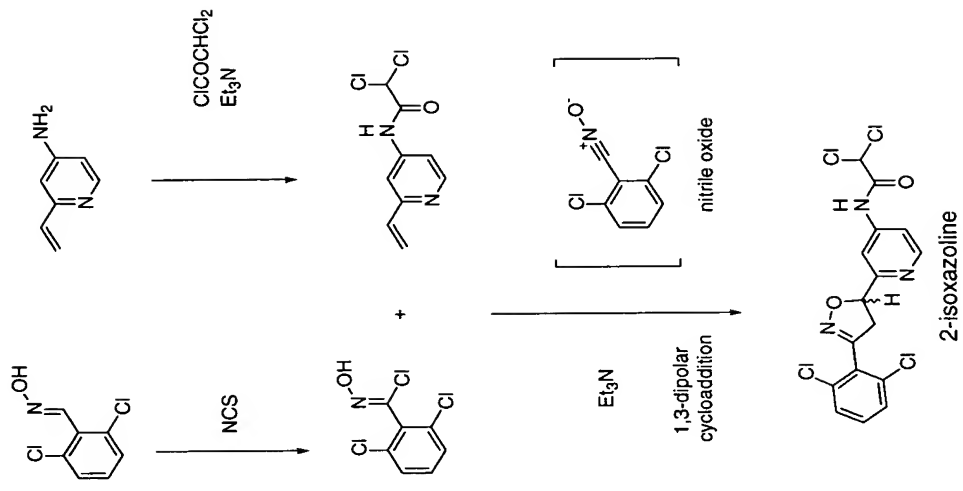


Figure 21  
4-Isoxazoline

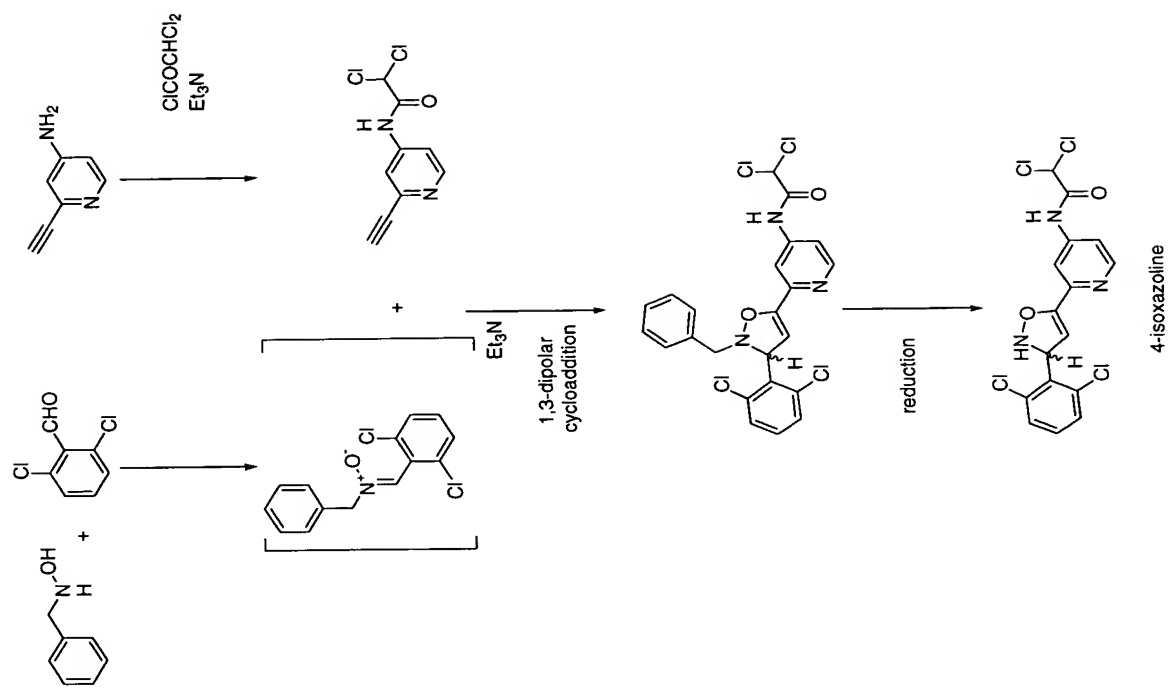


Figure 22  
Reverse 4-isoxazoline

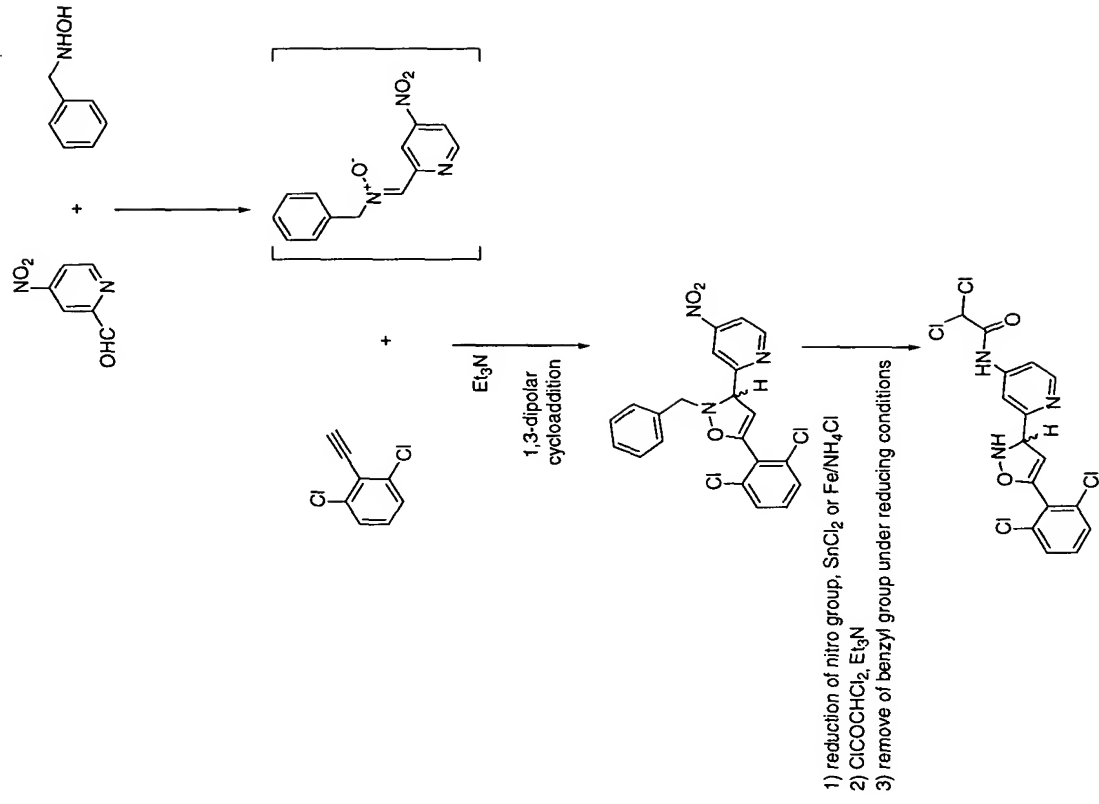


Figure 23  
3-Isoxazoline

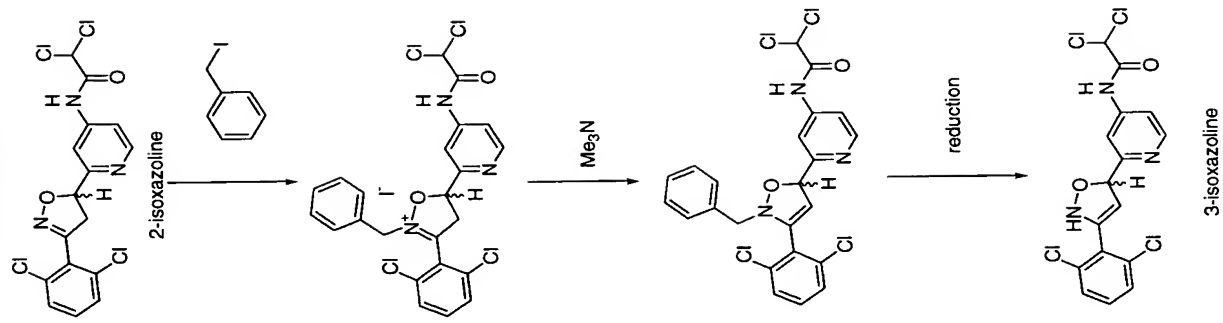


Figure 24  
Reverse 3-isoxazoline

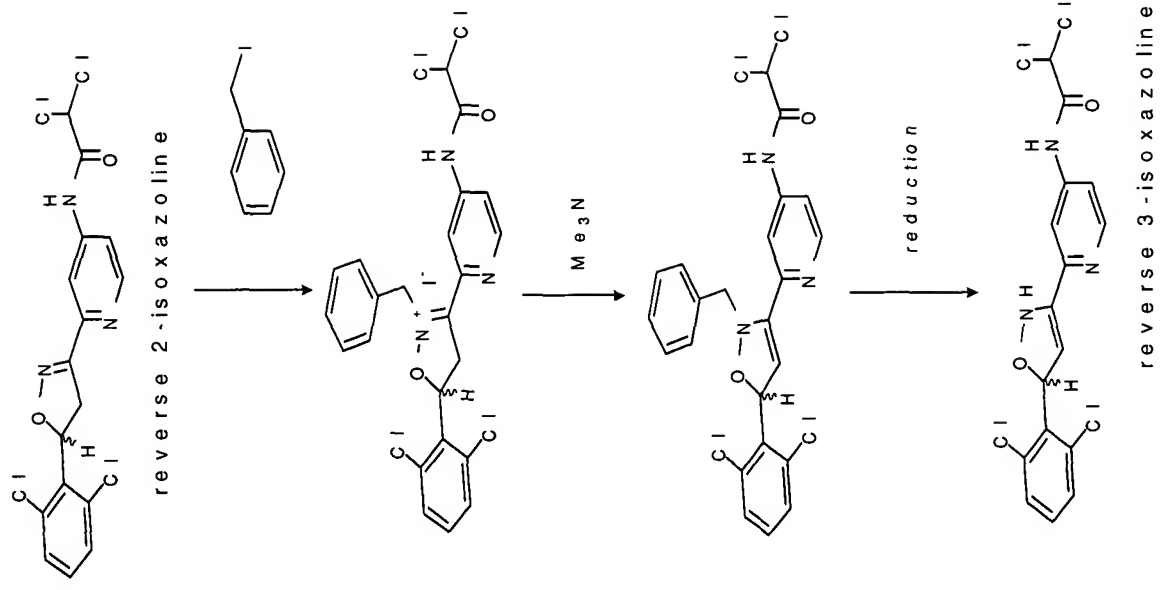


Figure 25  
Isoxazolidines

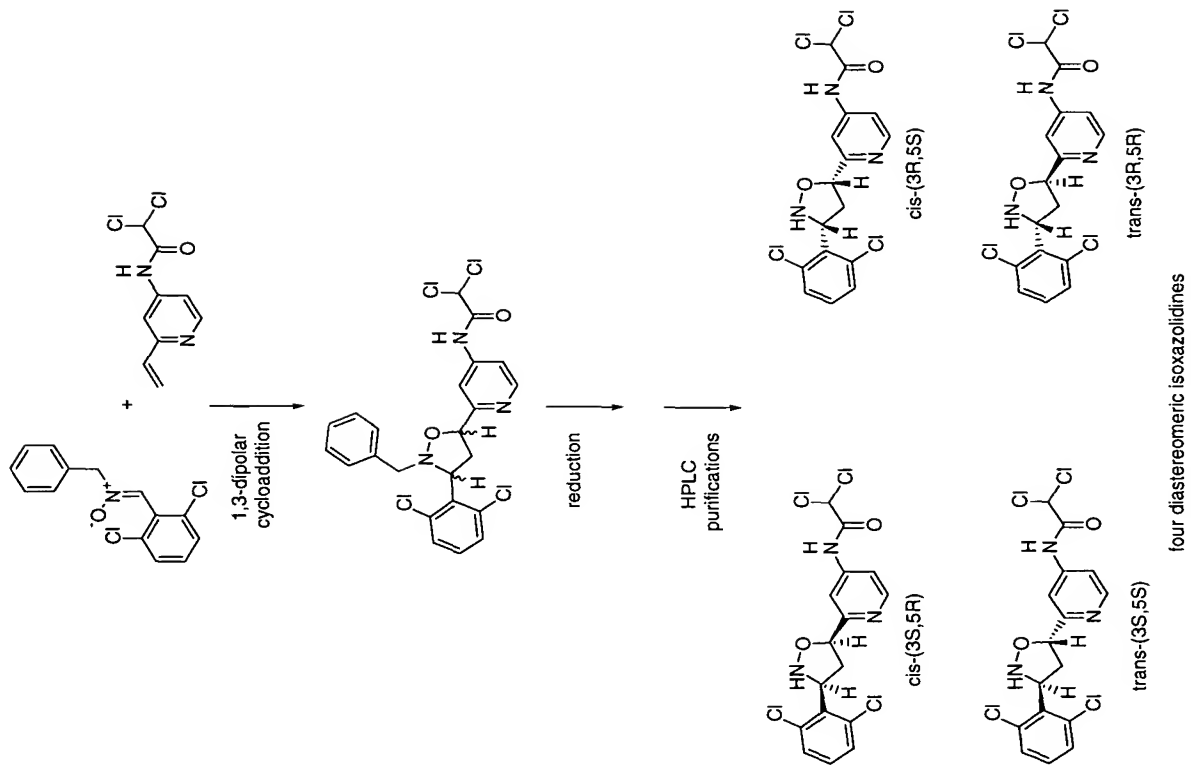


Figure 26  
Reverse isoxazolidines

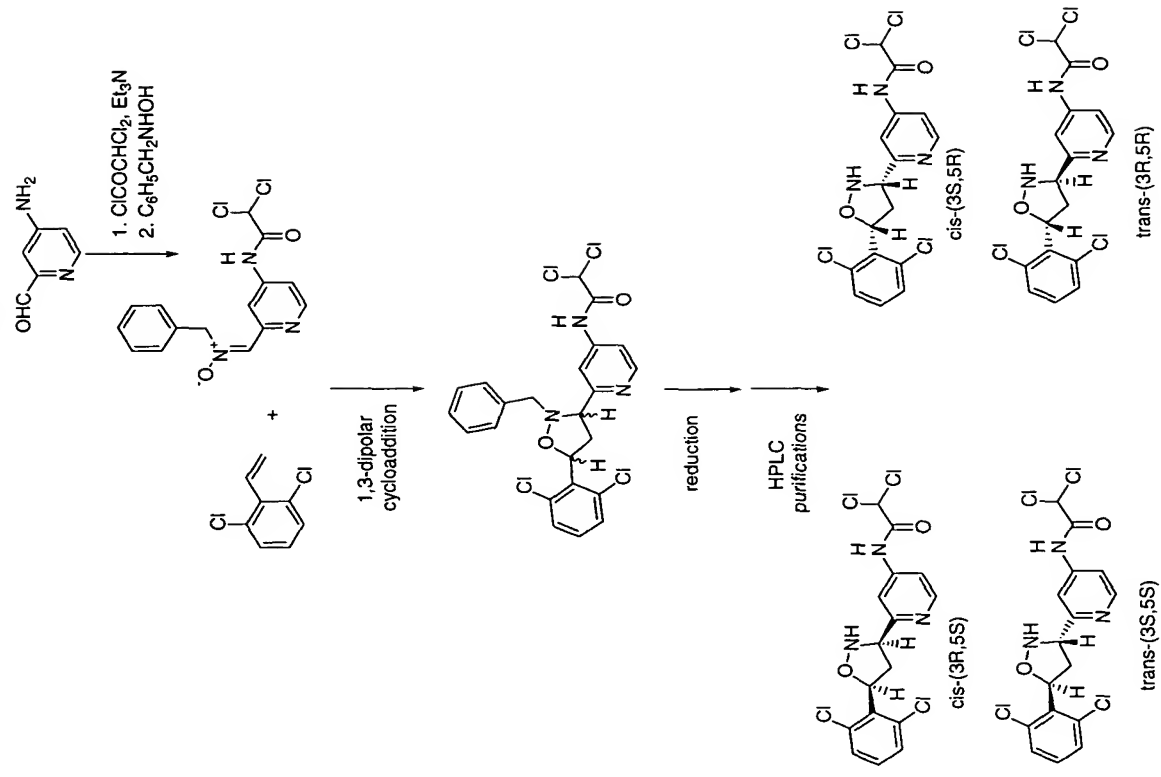
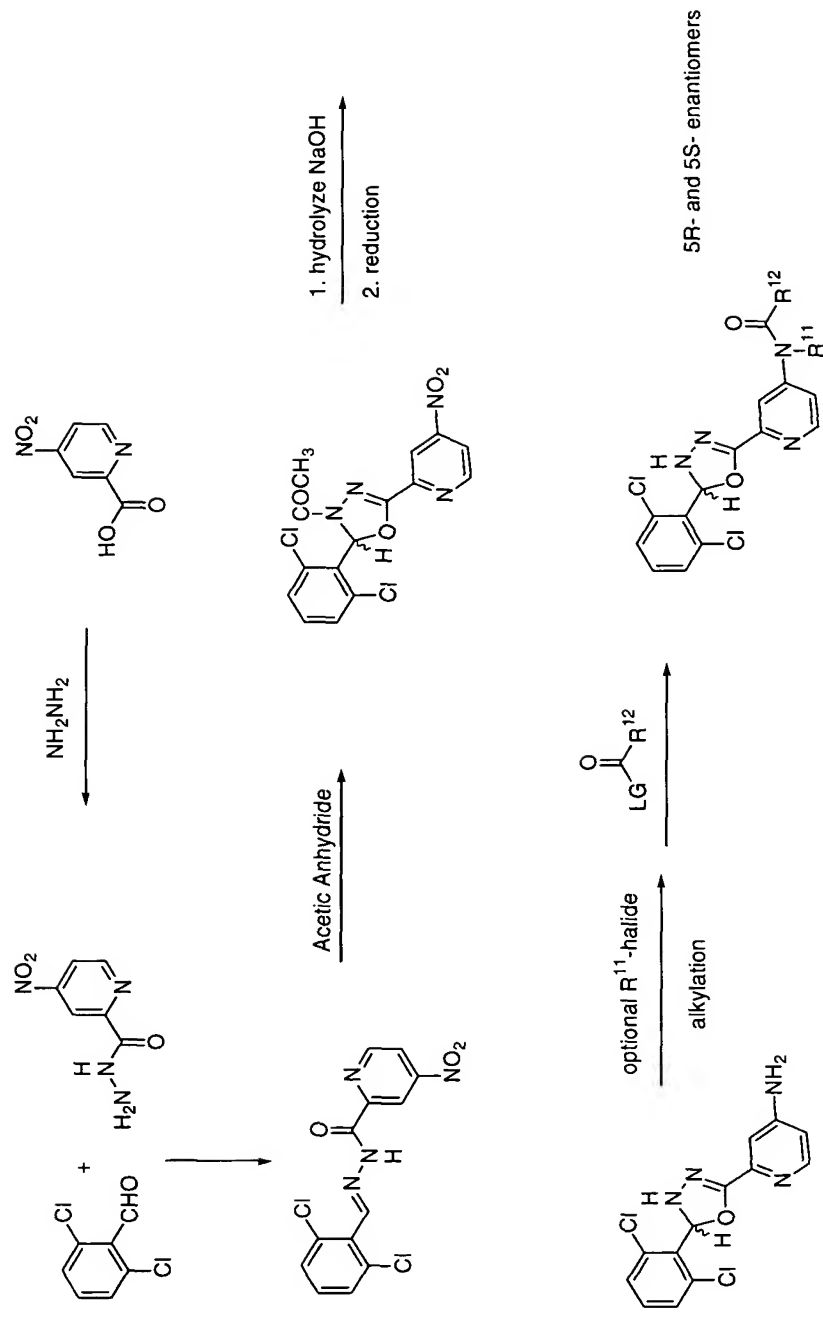






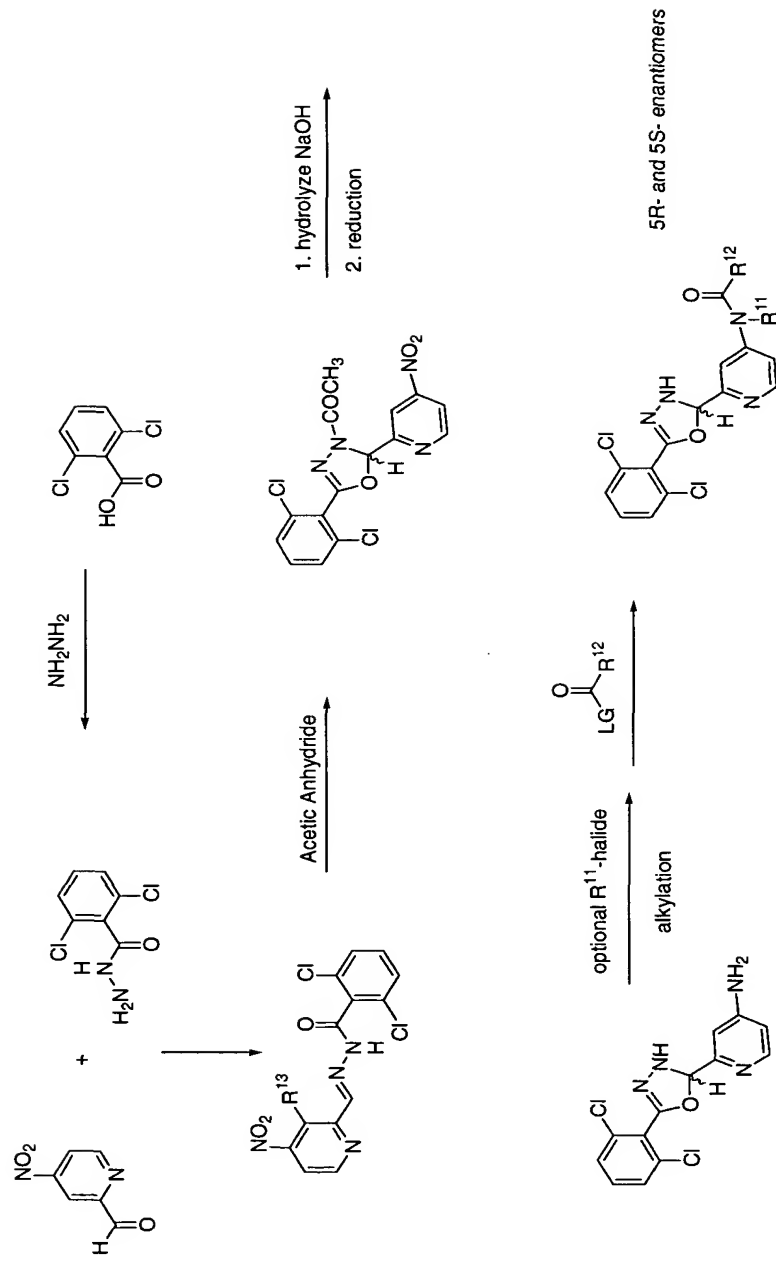
Figure 28  
4,5-dihydro-oxadiazoles



Representative Reference:

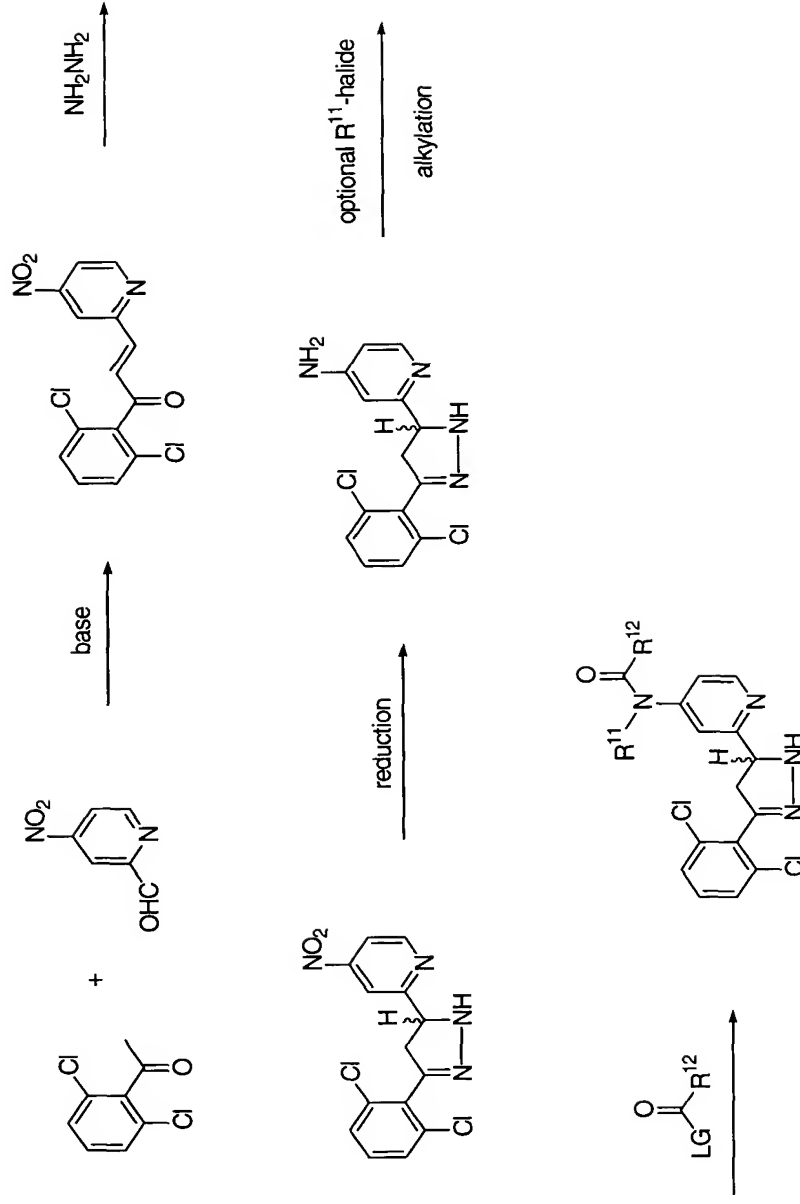
J.Chem.Research, Synopses, 1995, 88-89.

Figure 29  
Reverse 4,5-dihydro-oxadiazoles



Representative Reference:  
J.Chem.Research, Synopses, 1995, 88-89.

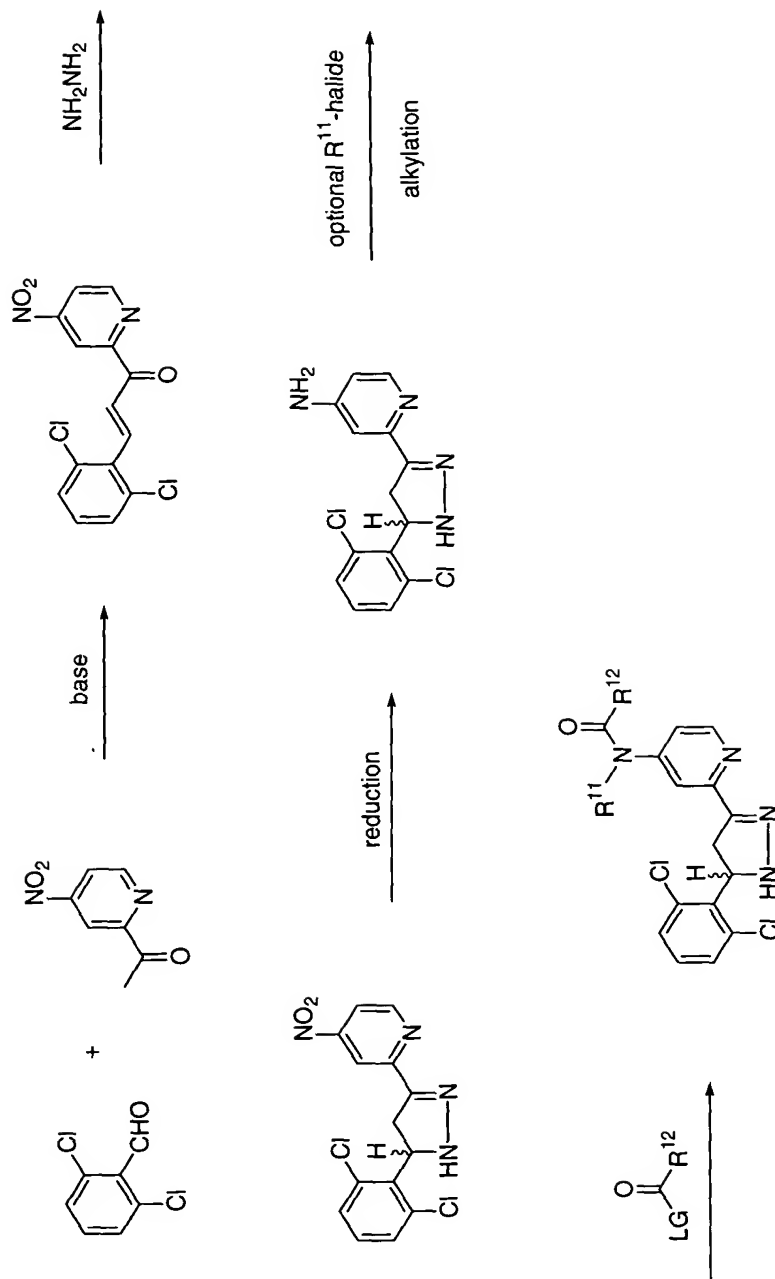
Figure 30  
2-pyrazolines



5R- and 5S- enantiomers

Representative Reference:  
Oriental J.Chem, 2001,17, 513-514.

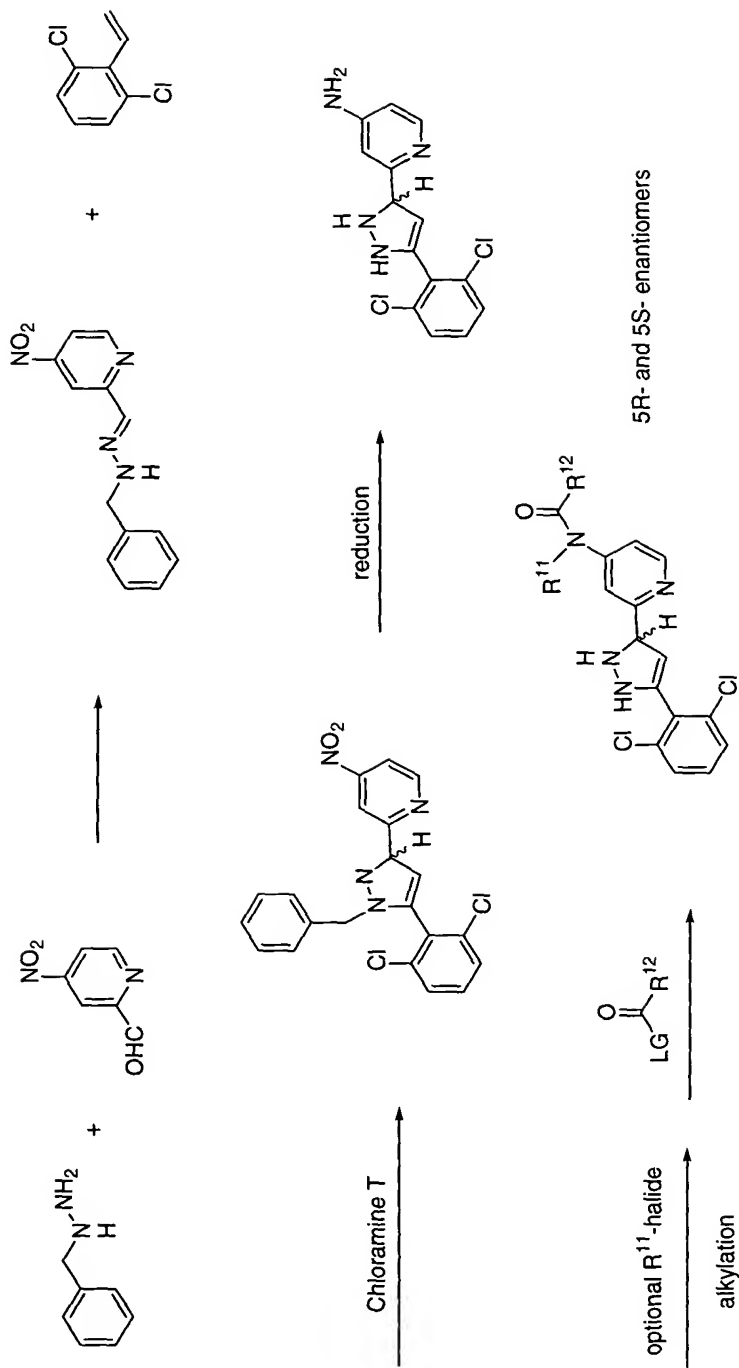
Figure 31  
reverse 2-pyrazolines



5R- and 5S- enantiomers

Representative Reference:  
Oriental J.Chem, 2001, 17, 513-514.

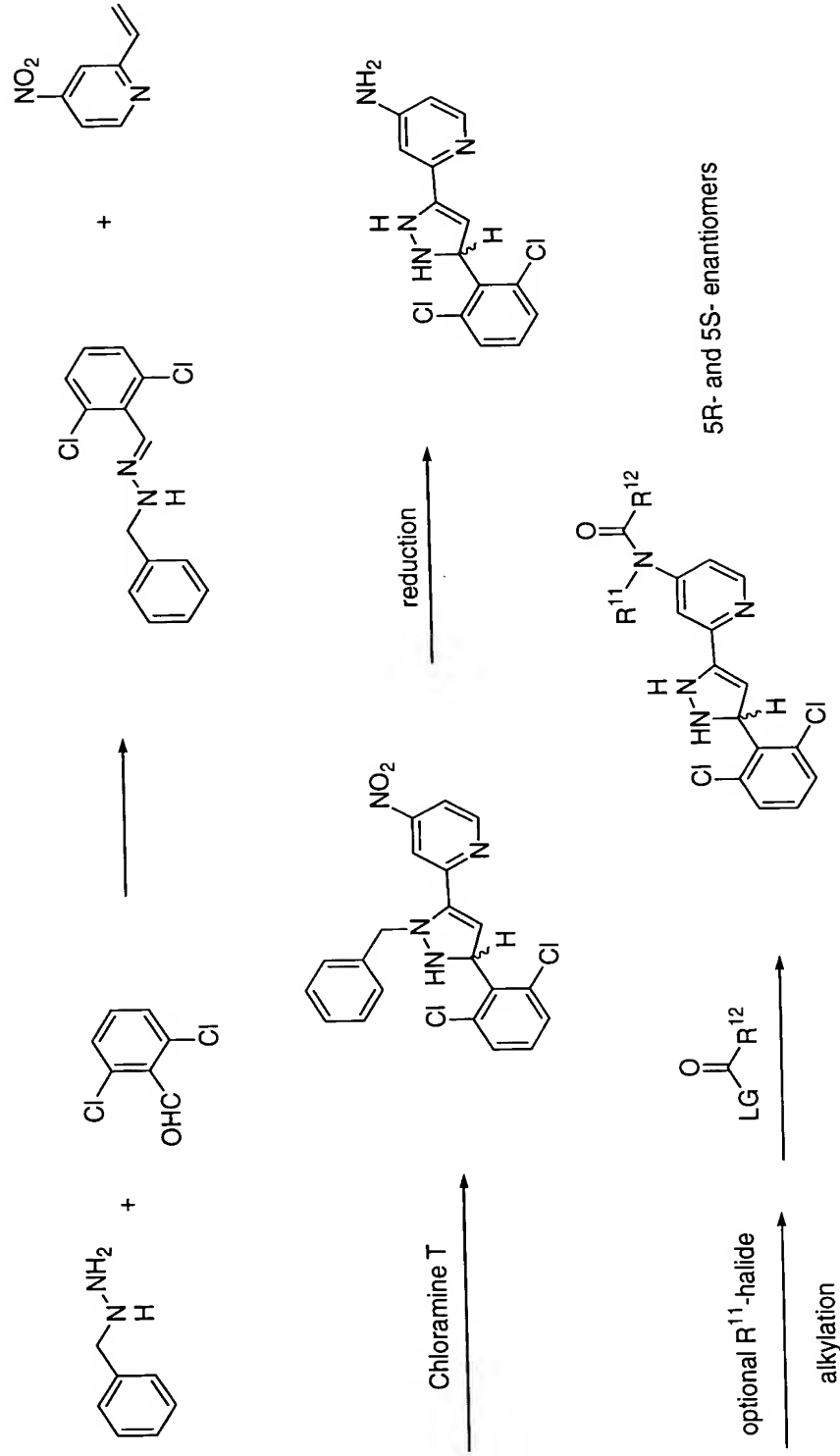
Figure 32  
3-pyrazolines



Representative Reference:

Synth. Commun., 1989, 19, 2799-2807.

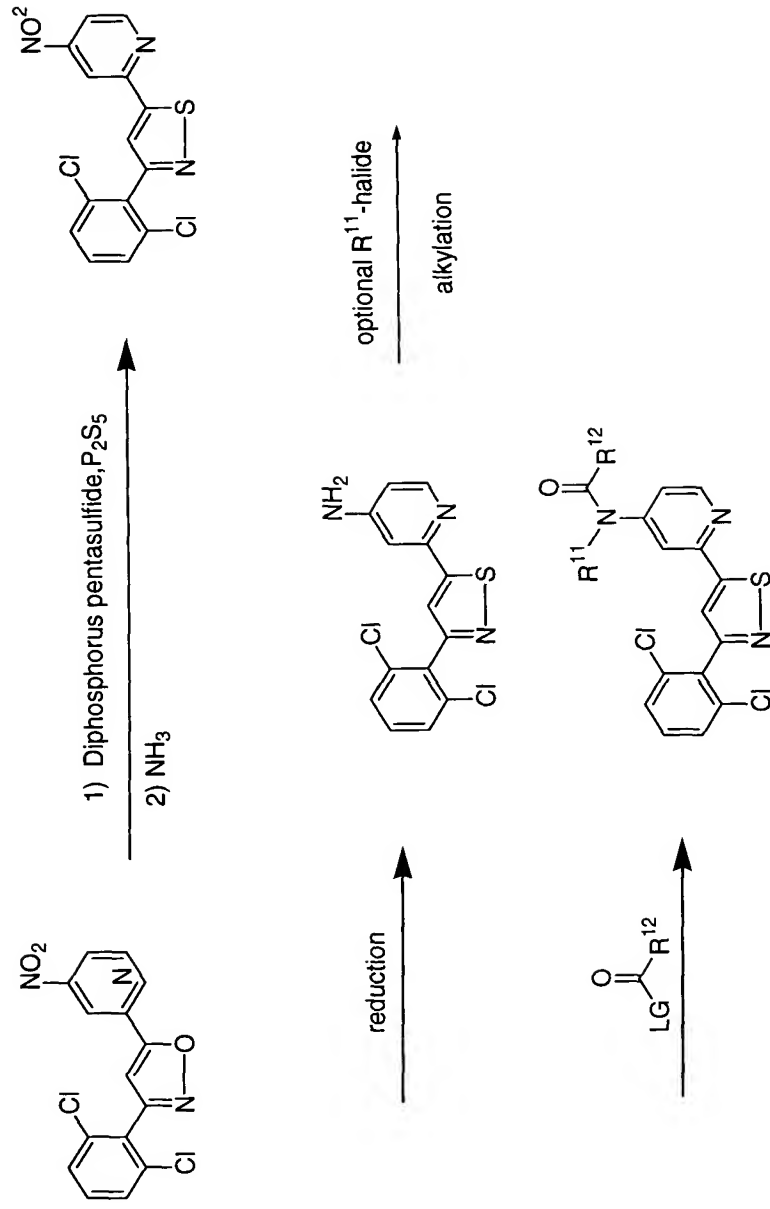
Figure 33  
Reverse 3-pyrazolines



Representative Reference:

Synth. Commun., 1989,19, 2799-2807.

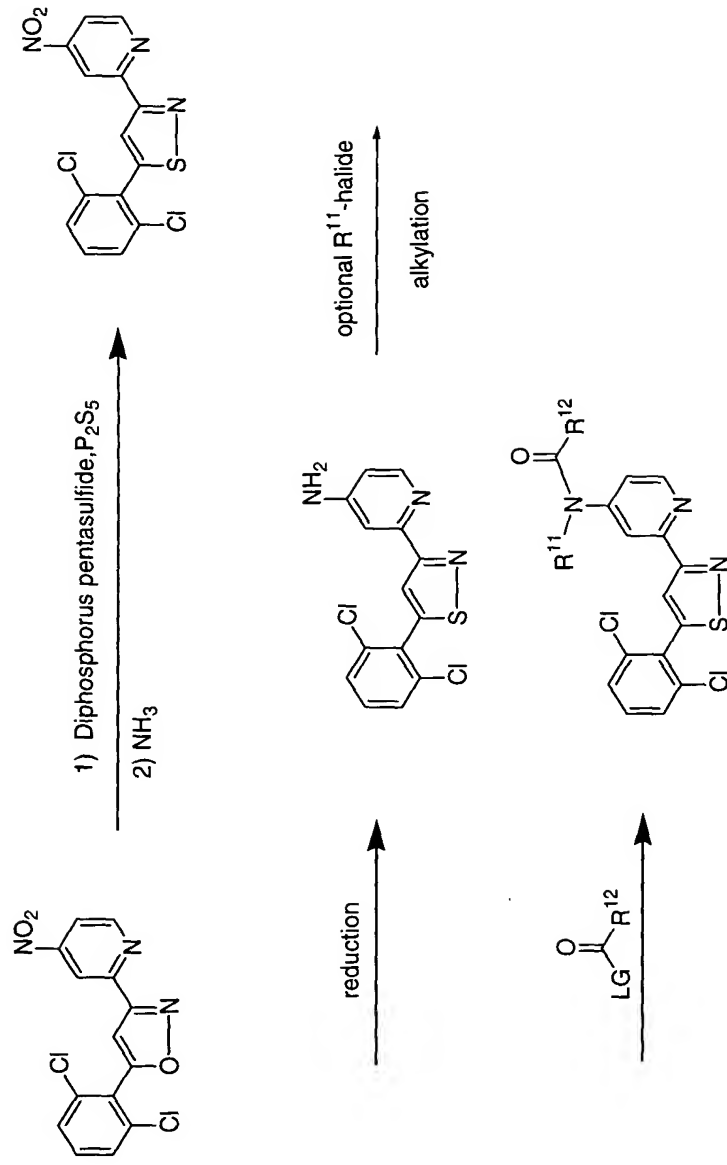
Figure 34  
Isothiazole



Representative Reference:

Tetrahedron, 1992, 48, 8127-8142.

Figure 35  
Reverse Isothiazole

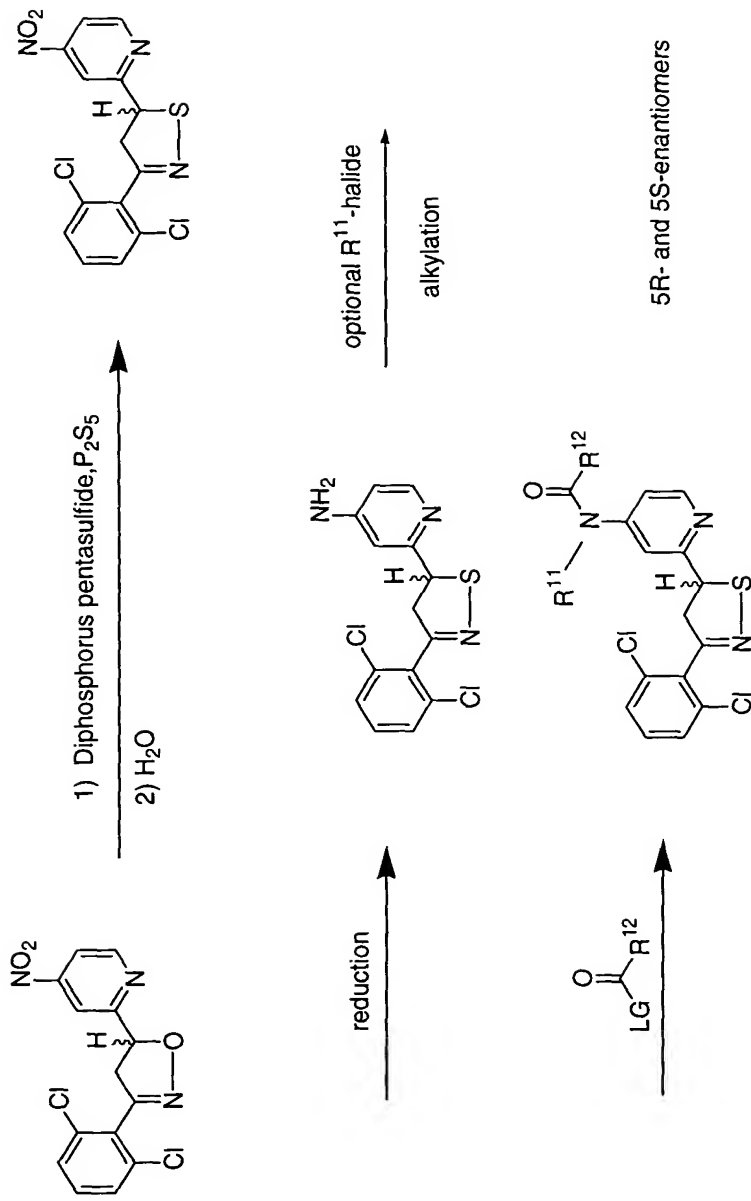


Representative Reference:

Tetrahedron, 1992, 48, 8127-8142.



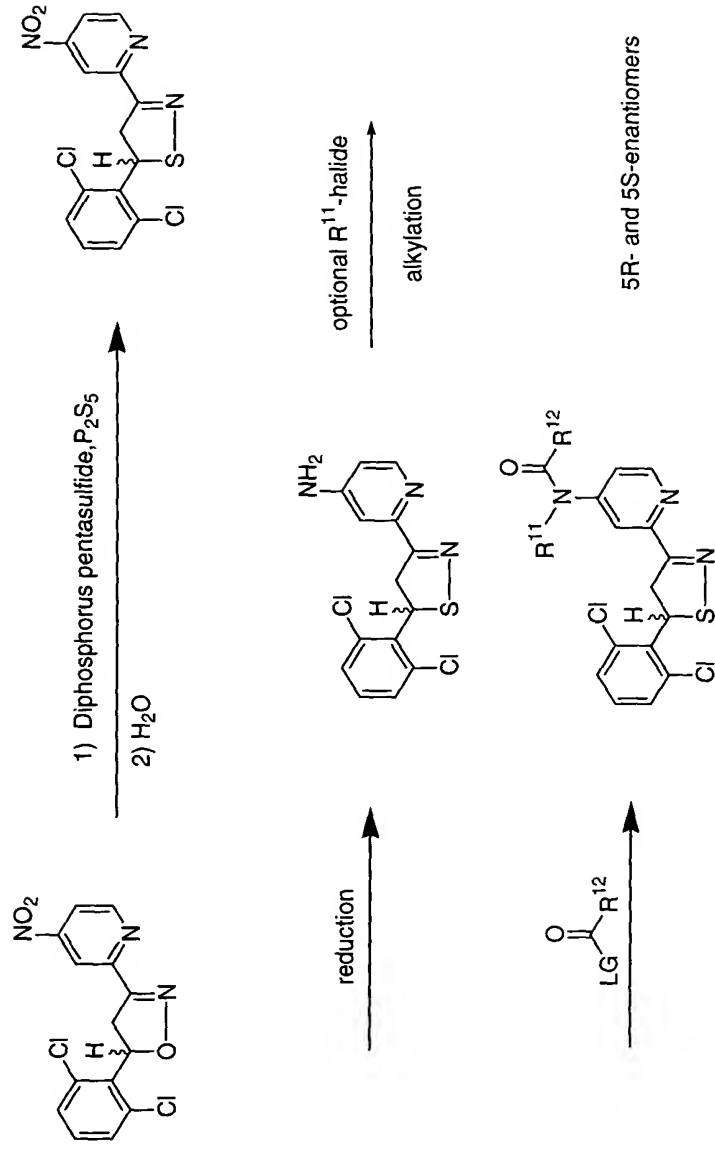
Figure 36  
2-Isothiazoline



Representative Reference:

Asian J.Chem., 2000, 12, 1358-1360.

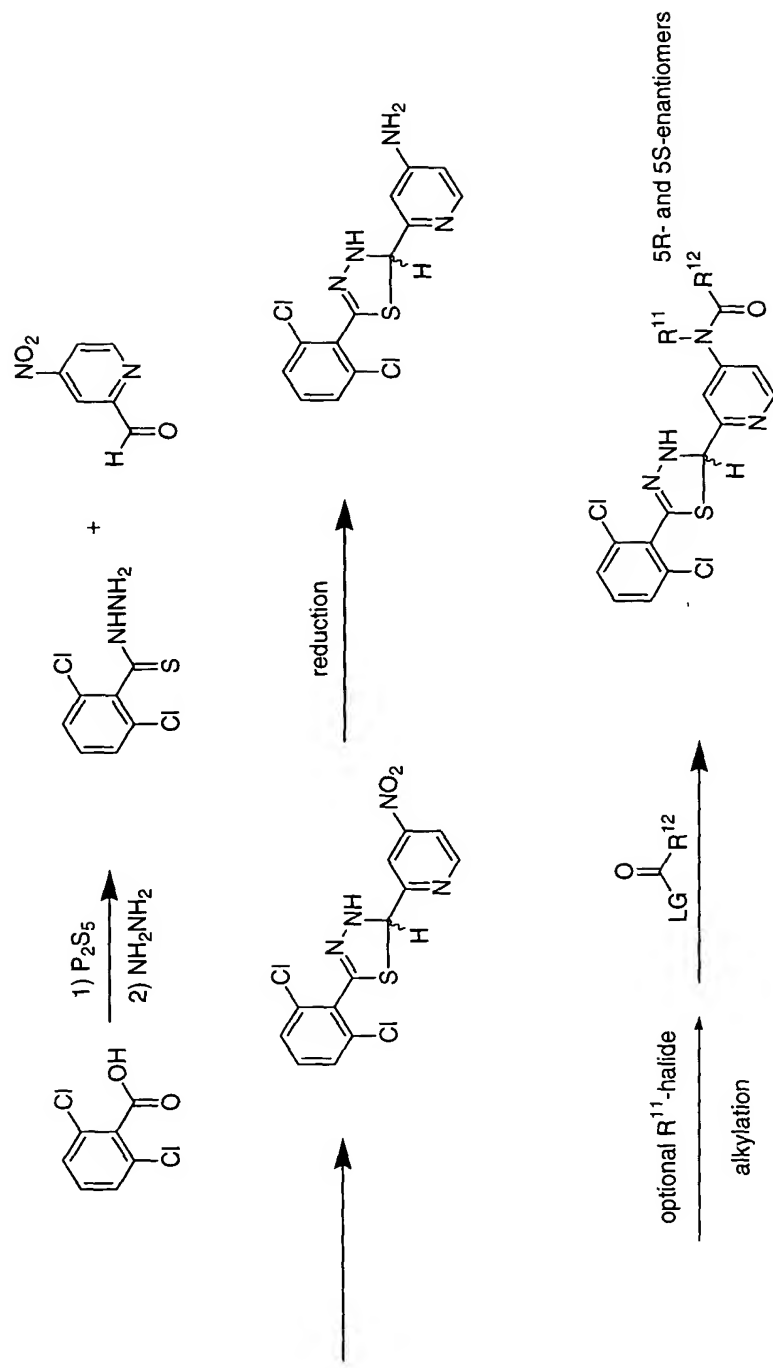
Figure 37  
Reverse 2-Isothiazoline



Representative Reference:

Asian J.Chem., 2000,12, 1358-1360.

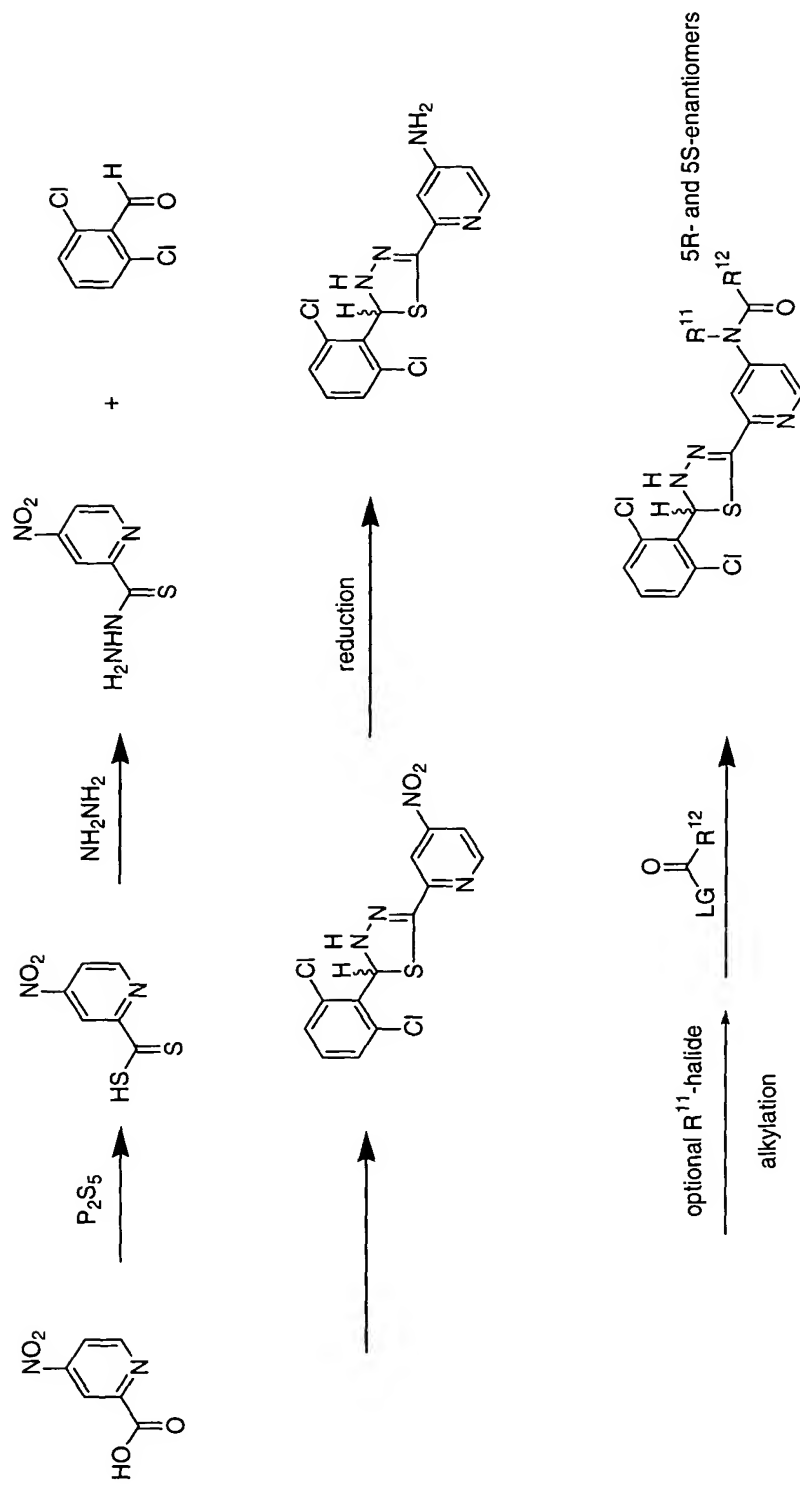
Figure 38  
4,5-Dihydro-1,3,4-thiadiazole



Representative Reference:

Sovrem. Aspekty Terorii i  
Prakt. Farmatsii, L., 1988, 90-96.

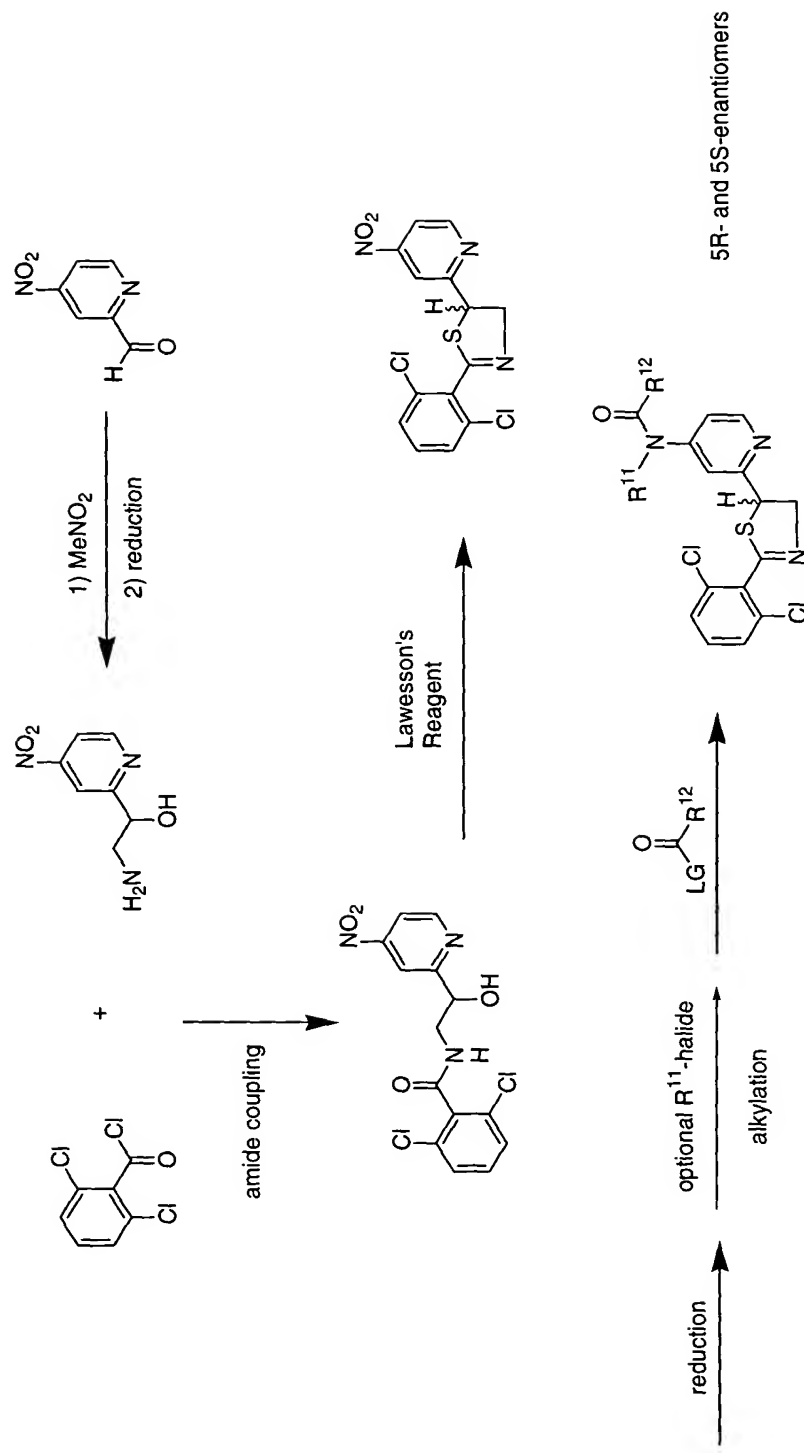
Figure 39  
Reverse 4,5-Dihydro-1,3,4-thiadiazole



Representative Reference:

Sovrem. Aspekty Terorii i  
Prakt. Farmatsii. L., 1988, 90-96.

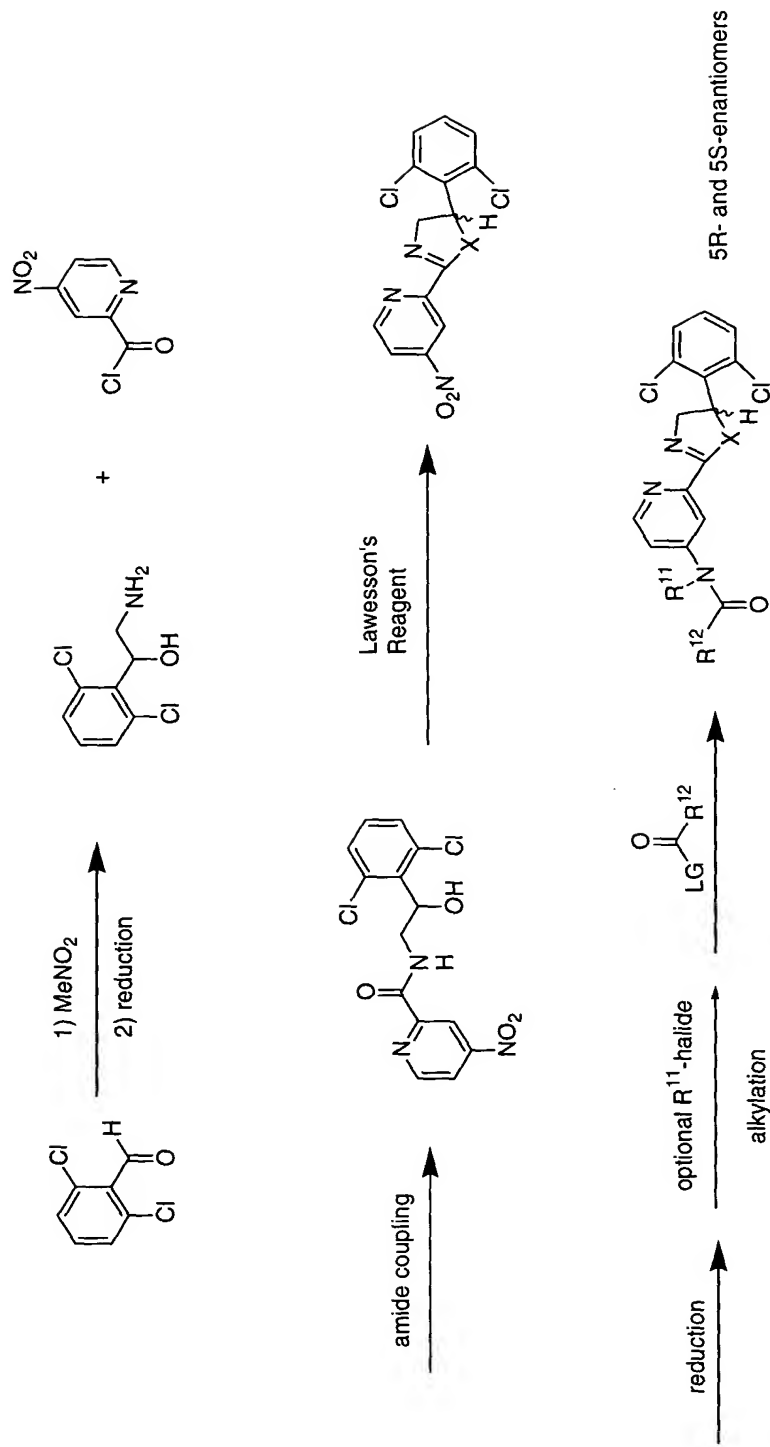
Figure 40  
2-Thiazoline



Representative References:

Collection of Czechoslovak Chemical  
Communications, 1978, 43(7), 1917-1923  
J. Org. Chem., 1997, 62, 1106-1111.

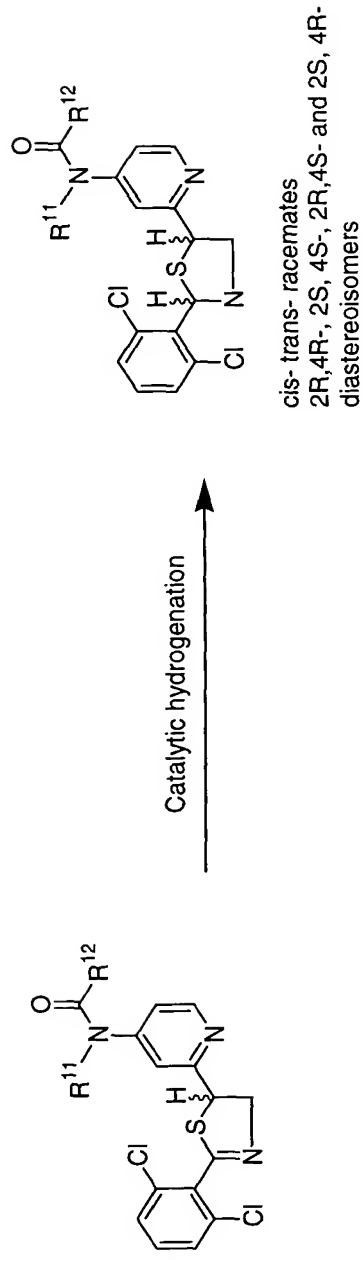
Figure 41  
Reverse 2-Thiazoline



Representative References:

Collection of Czechoslovak Chemical  
Communications, 1978, 43(7), 1917-1923  
J. Org. Chem., 1997, 62, 1106-1111.

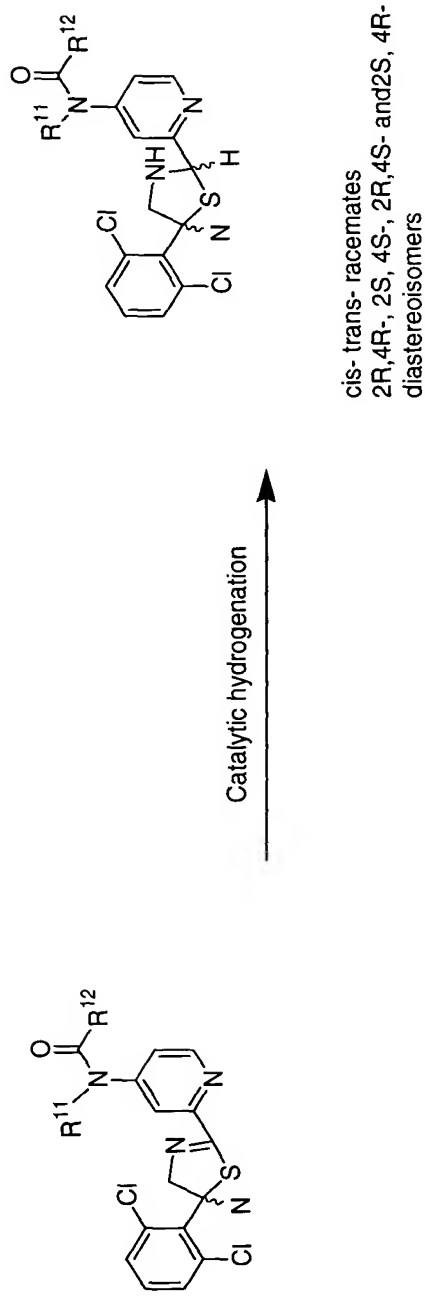
Figure 42  
Thiazolidines



Representative Reference:

See March's Advanced Organic Chemistry 5th Ed  
 John Wiley & Sons, Inc. 2001, Topics related to  
catalytic hydrogenation.

Figure 43  
Reverse Thiazolidines

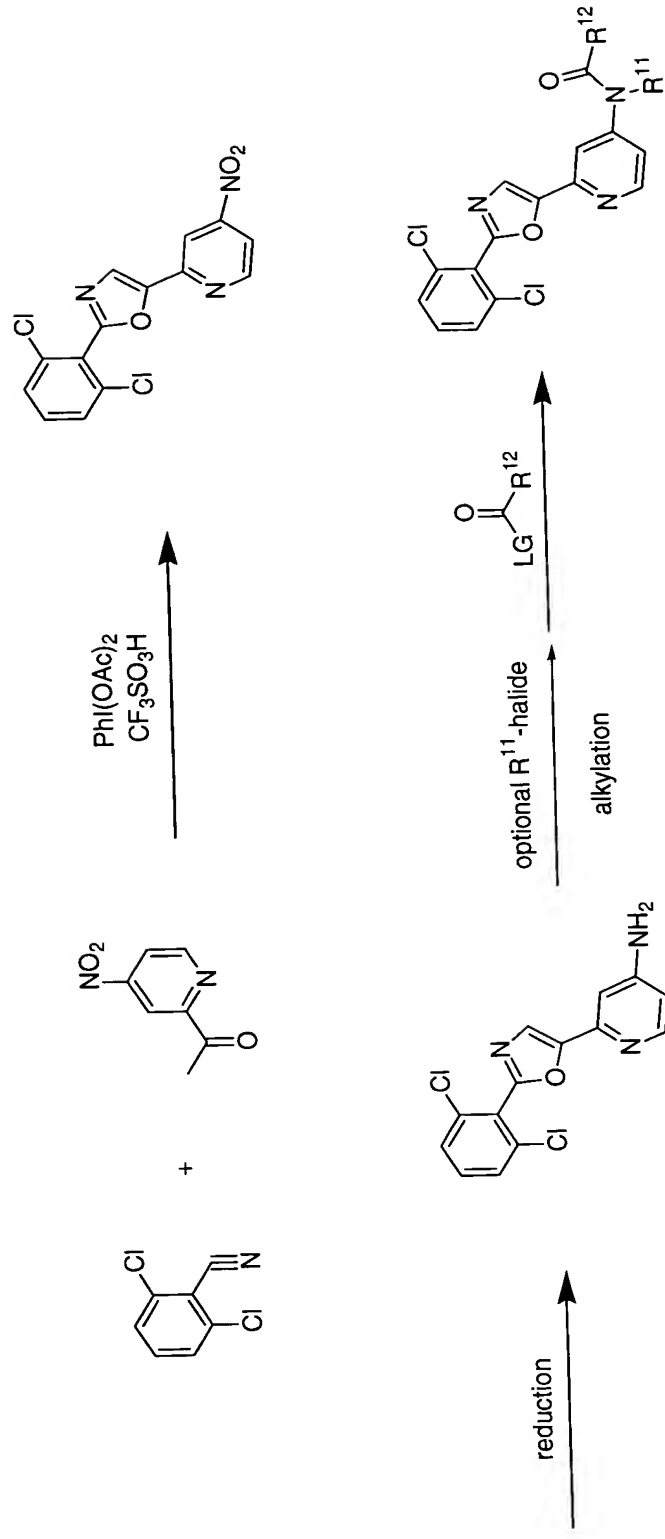


Representative Reference:

See March's Advanced Organic Chemistry 5th Ed  
John Wiley & Sons, Inc. 2001, Topics related to  
catalytic hydrogenation.



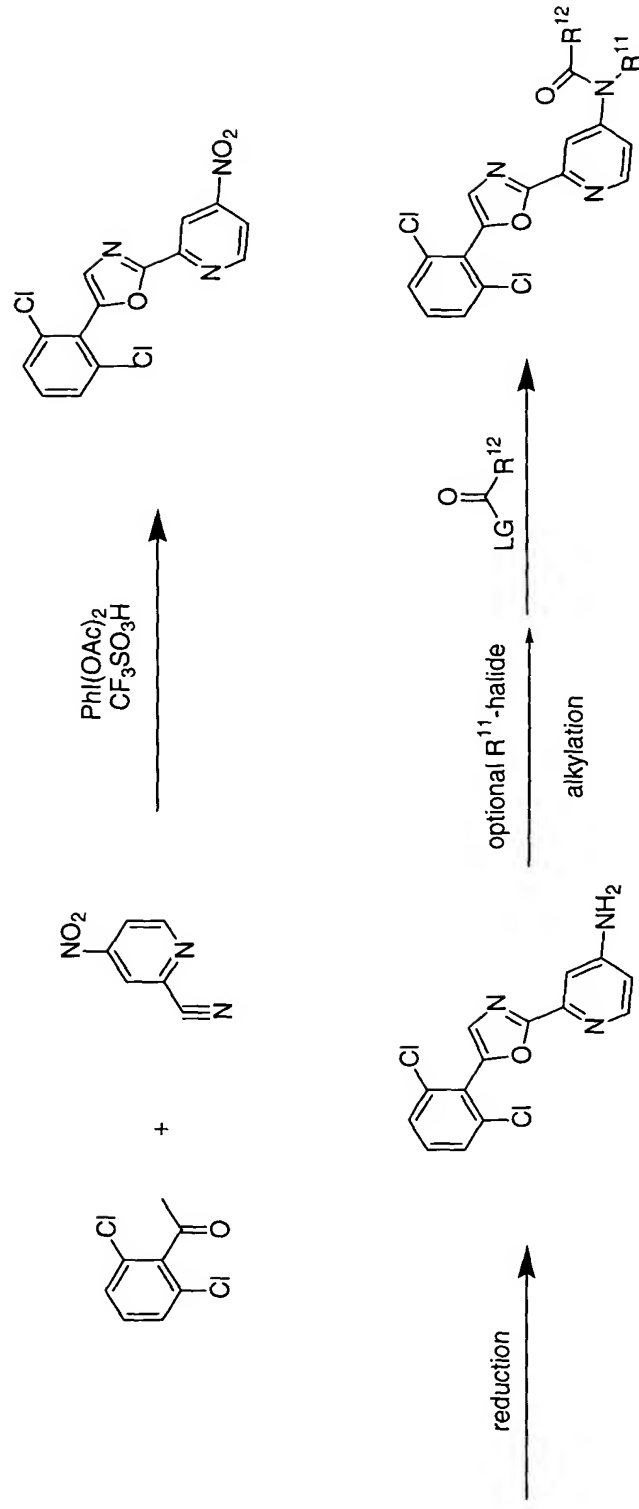
Figure 44  
Oxazole



Representative Reference:

Varma, R.S et al J. of Heterocyclic Chem.,  
1998, 35(6), 1533-1534

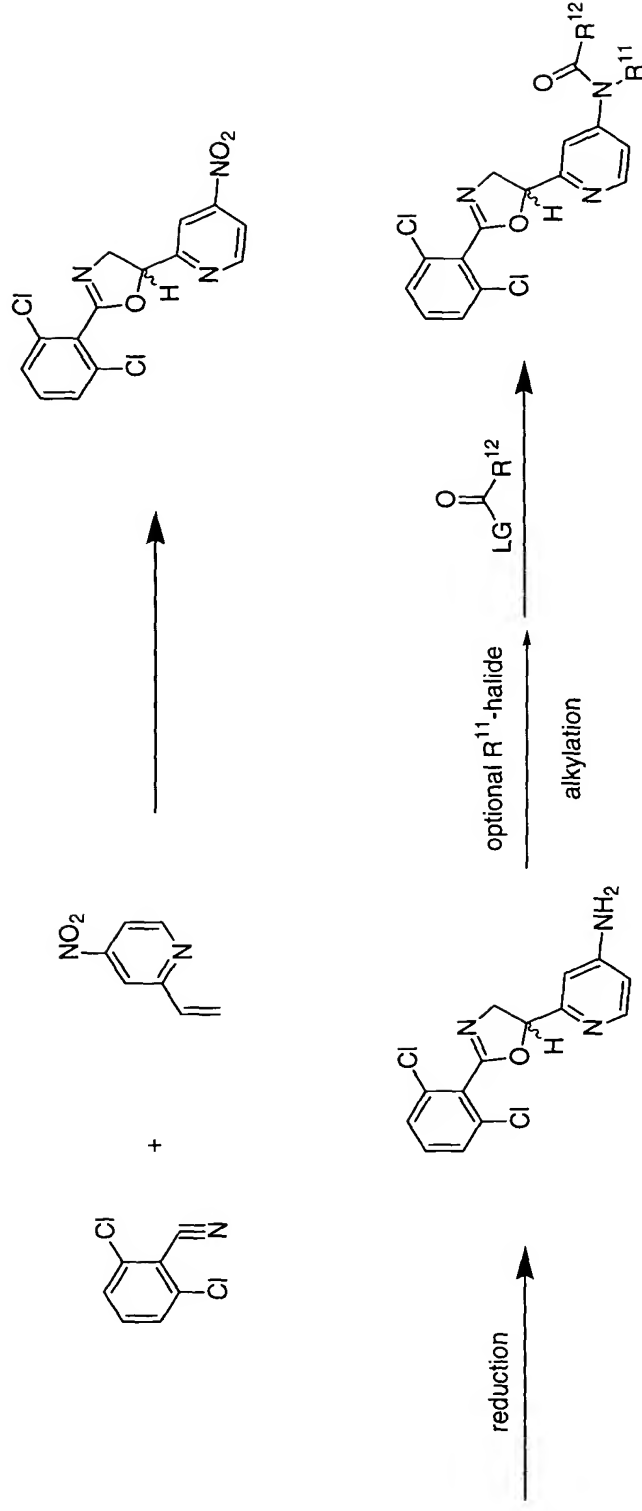
Figure 45  
Reverse Oxazole



Representative Reference:

Varma, R.S et al J. of Heterocyclic Chem.,  
1998, 35(6), 1533-1534

Figure 46  
2-Oxazoline

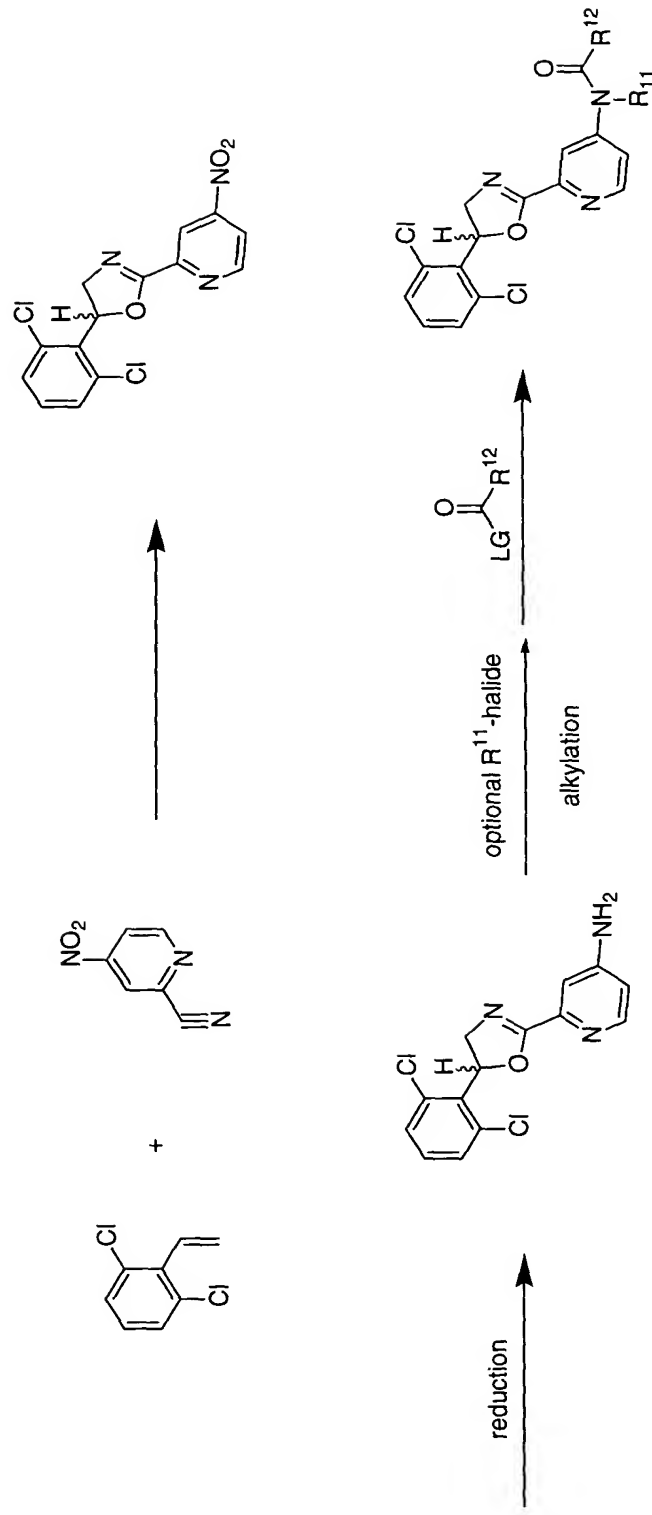


Representative Reference:

Li, Q et al Bioorg&Med. Chem.Lett.,  
2002, 12(3), 465-469.

4R- and 4S- enantiomers

Figure 47  
Reverse 2-Oxazoline

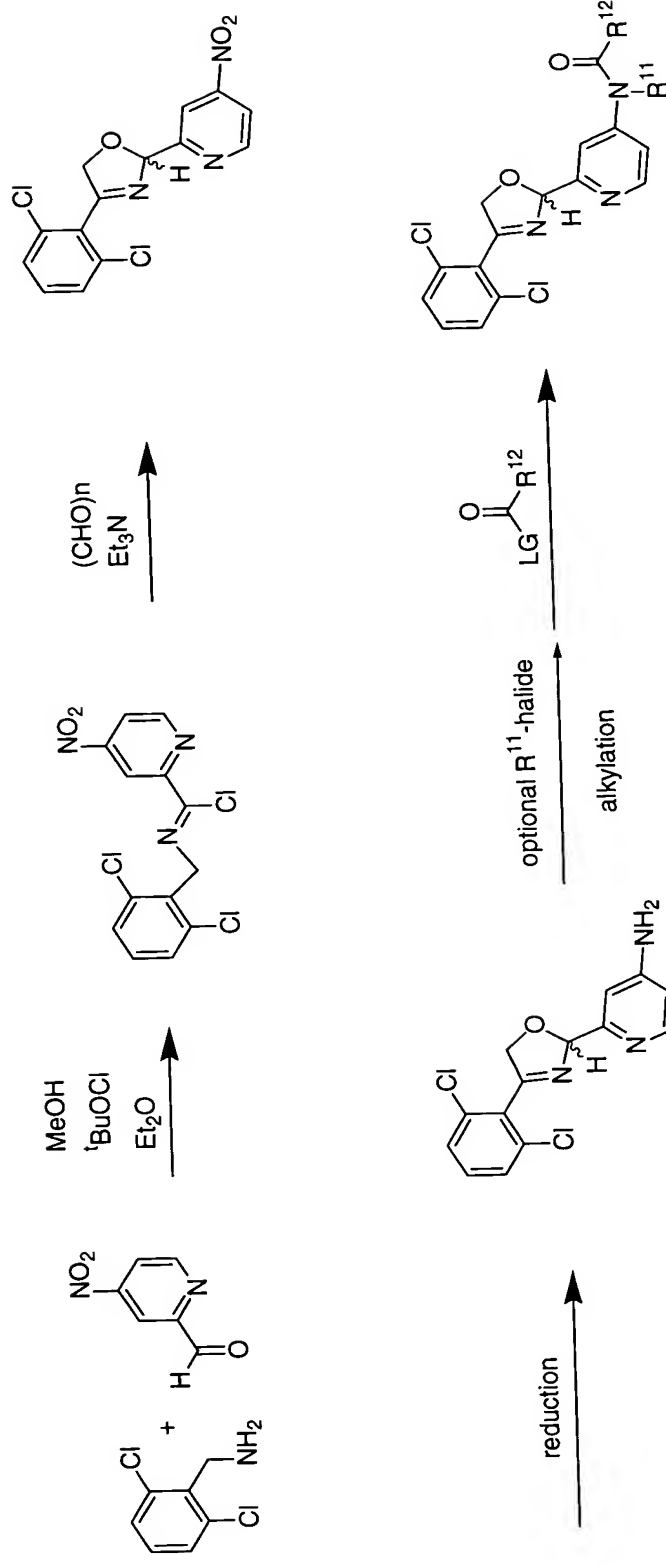


Representative Reference:

Li, Q et al Bioorg&Med. Chem.Lett.,  
2002, 12(3), 465-469.

5R- and 5S- enantiomers

Figure 48  
3-Oxazoline



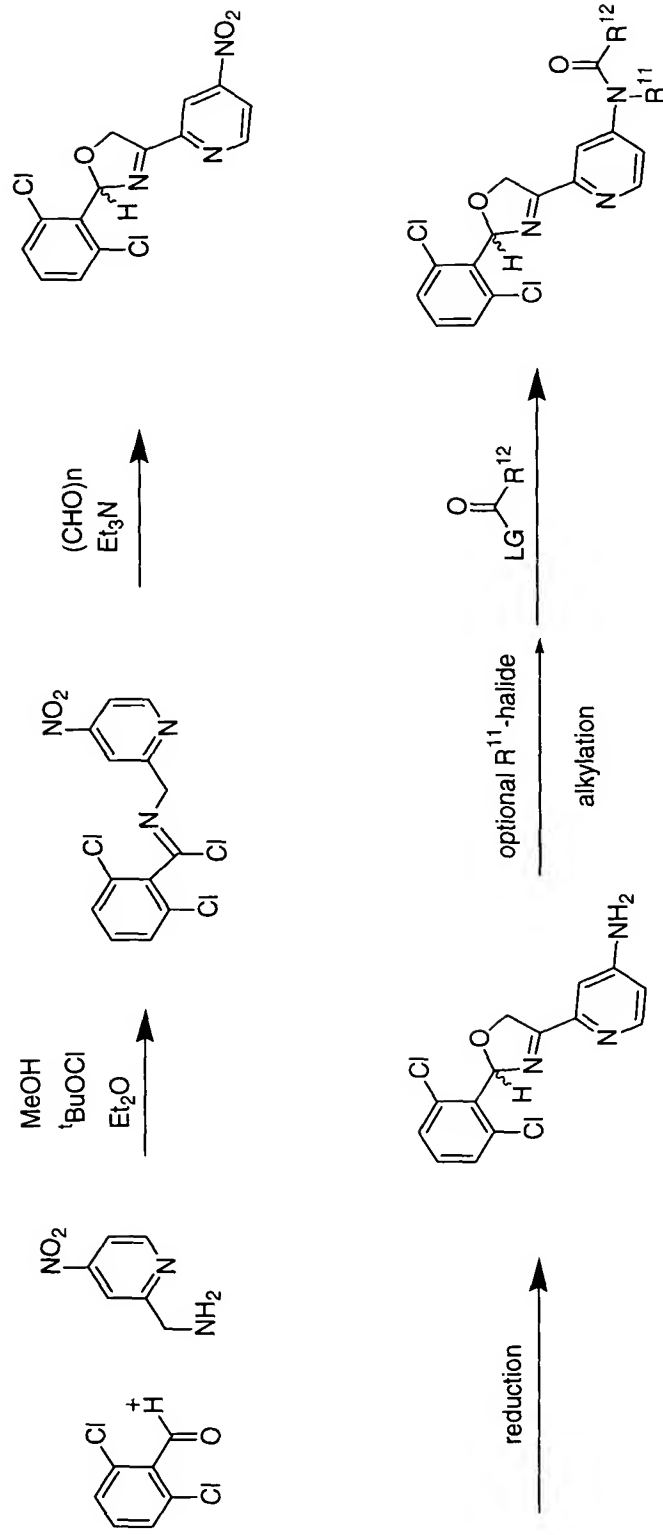
Representative Reference:

Paul, H et al, *Chem. Ber.*, 1965, 98, 1450

Huisgen, R et al, *Angew. Chem.*, 1962, 74, 31.

2R- and 2S- enantiomers

Figure 49  
Reverse 3-Oxazoline

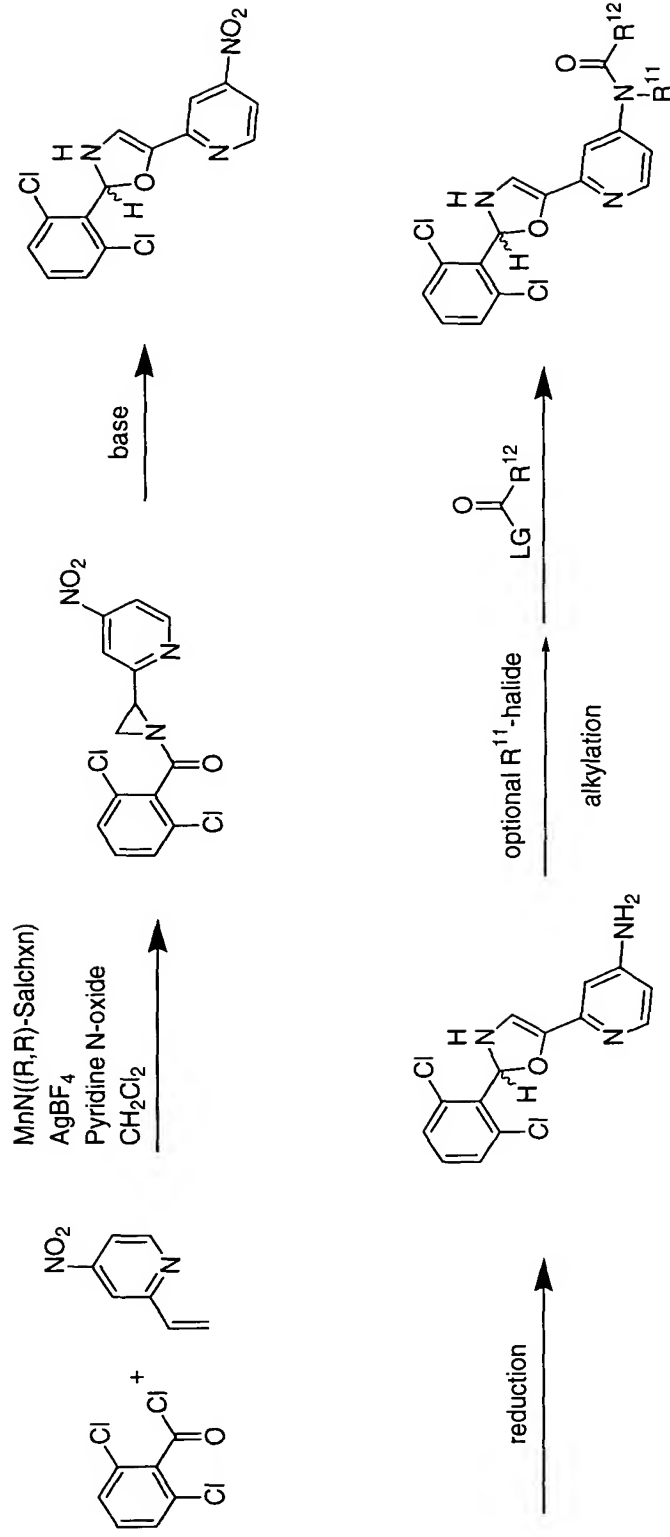


Representative Reference:

Paul, H et al, *Chem. Ber.*, 1965, 98, 1450  
 Huisgen, R et al, *Angew. Chem.*, 1962, 74, 31.

2R- and 2S- enantiomers

Figure 50  
4-Oxazoline



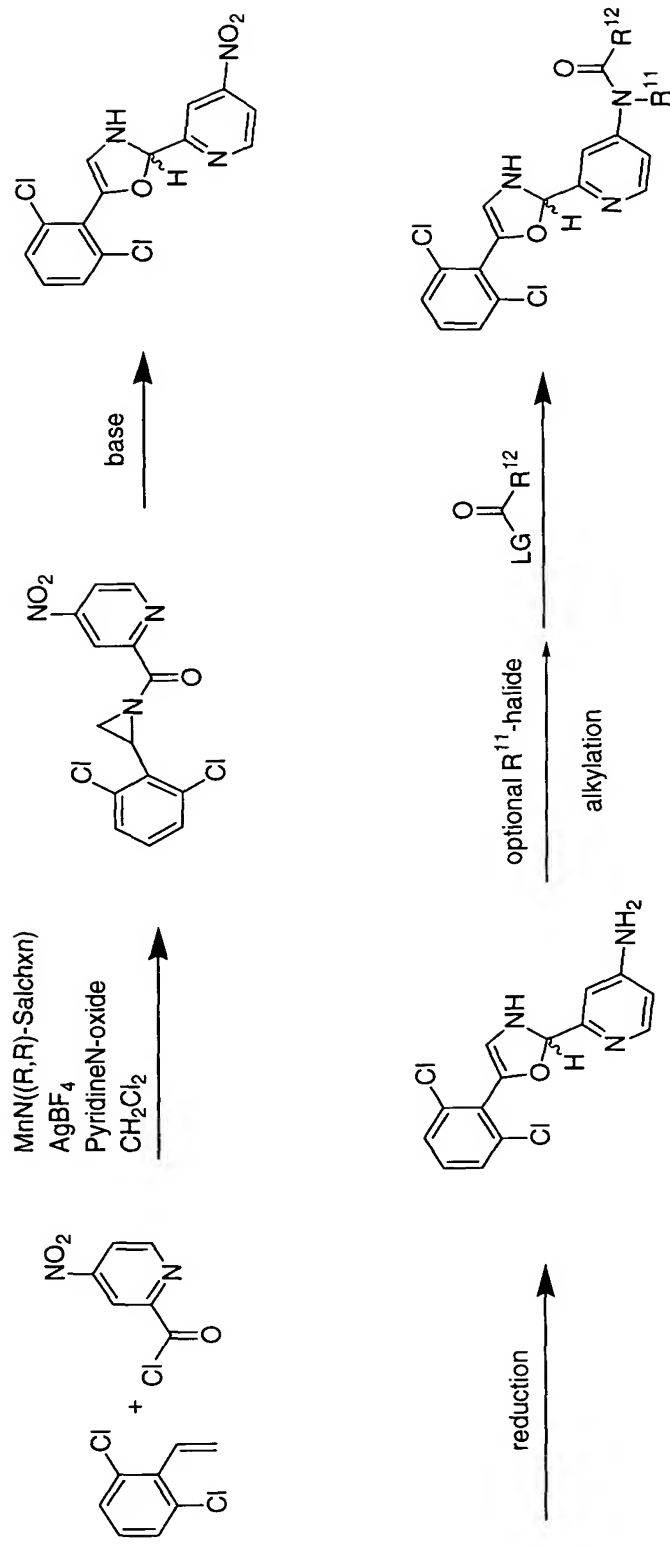
Representative Reference:

Minakata, S et al., Tet Lett., 2001, 42(51), 9019-9022.

Stamm, H et al., Chem. Ber., 1990, 123 (11), 2227-2230.

2R- and 2S- enantiomers

Figure 51  
Reverse 4-Oxazoline



Representative Reference:

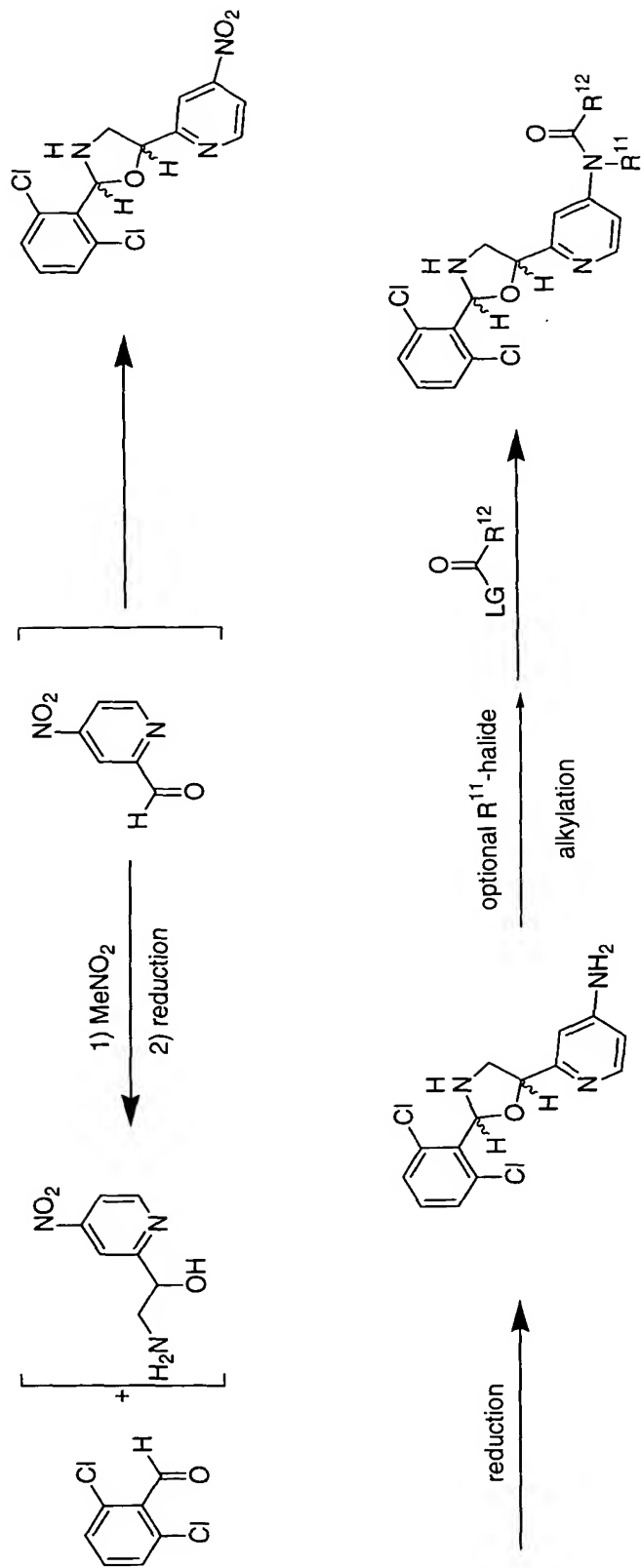
Minakata, S et al., Tet Lett., 2001, 42(51), 9019-9022.

Stamm, H et al., Chem. Ber., 1990, 123 (11), 2227-2230.

2R- and 2S- enantiomers



FIGURE 52  
OXAZOLIDINES

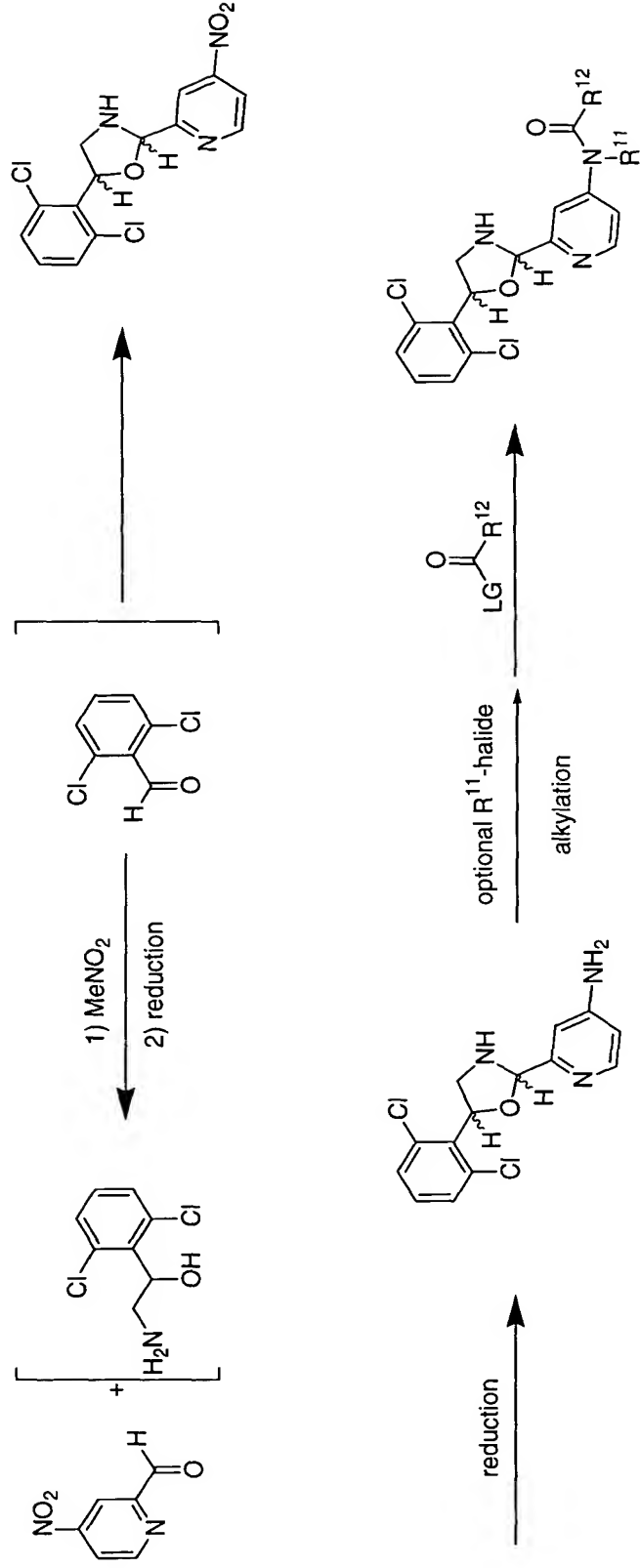


Representative Reference:

Schoenenberger, H et al., Archiv der Pharmazie  
1975, 308(9), 717-719.

cis- and trans- racemates  
2R,5R-, 2S,5S-, 2R,5S- and 2S,5R  
diastereoisomers

Figure 53  
Reverse Oxazolidines

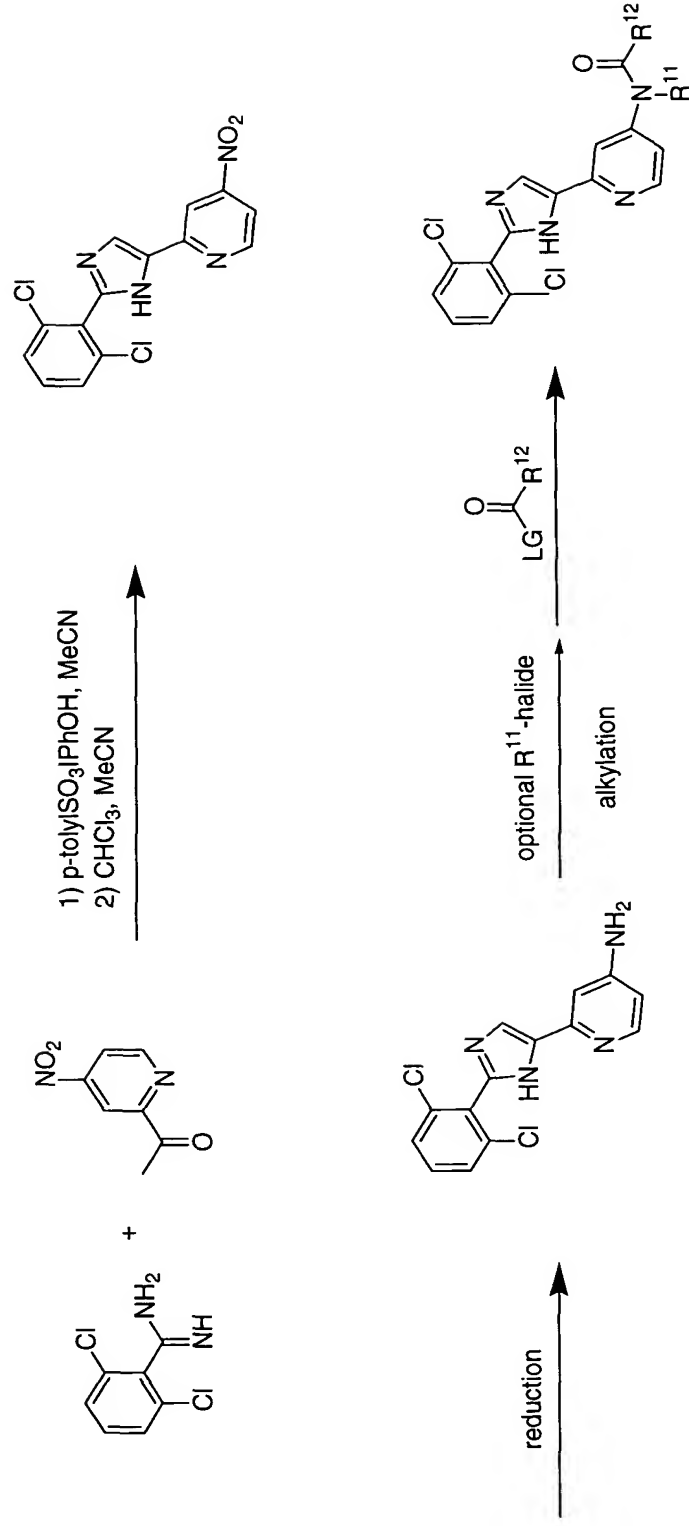


Representative Reference:

Schoenenberger, H et al., Archiv der Pharmazie  
1975, 308(9), 717-719.

cis- and trans- racemates  
2R,5R-, 2S,5S-, 2R,5S- and 2S,5R  
diastereoisomers

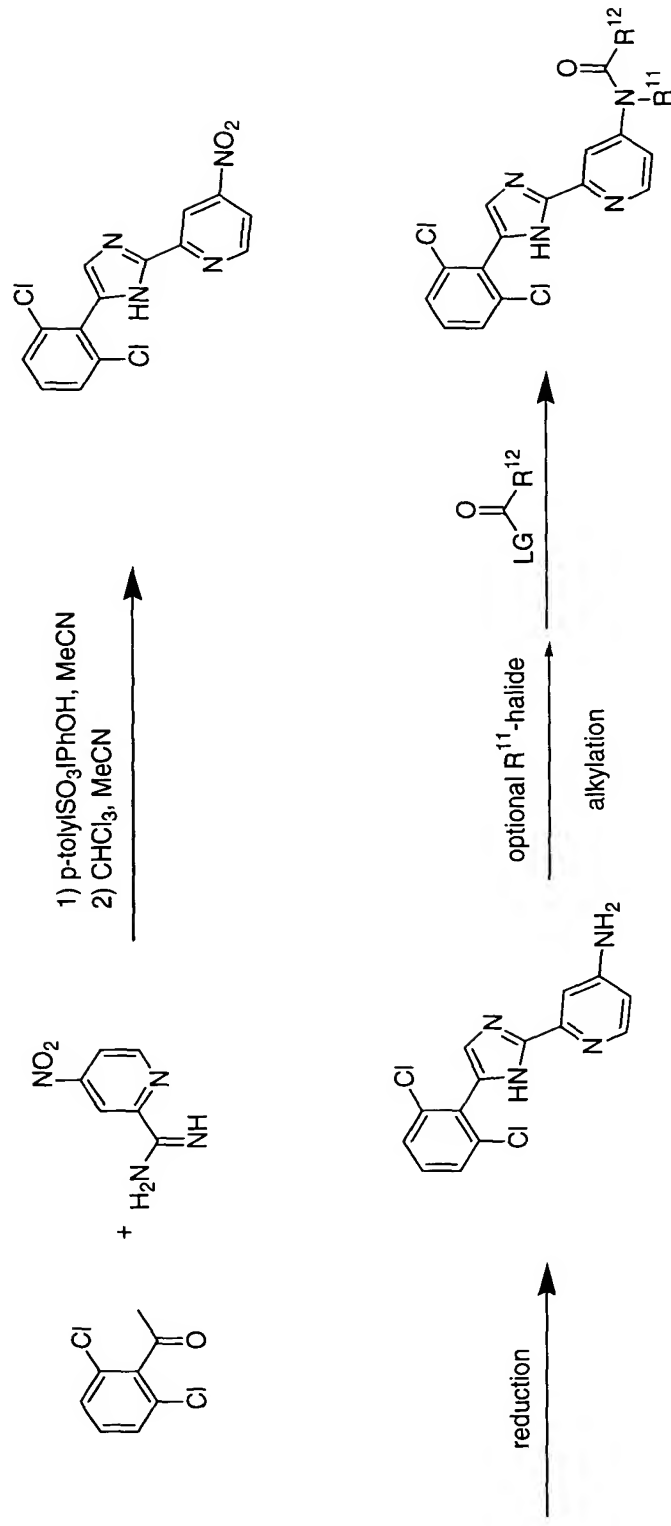
Figure 54  
Imidazole



Representative Reference:

Zhang, P-F et al., Synthesis 2001, 14, 2075-2077.

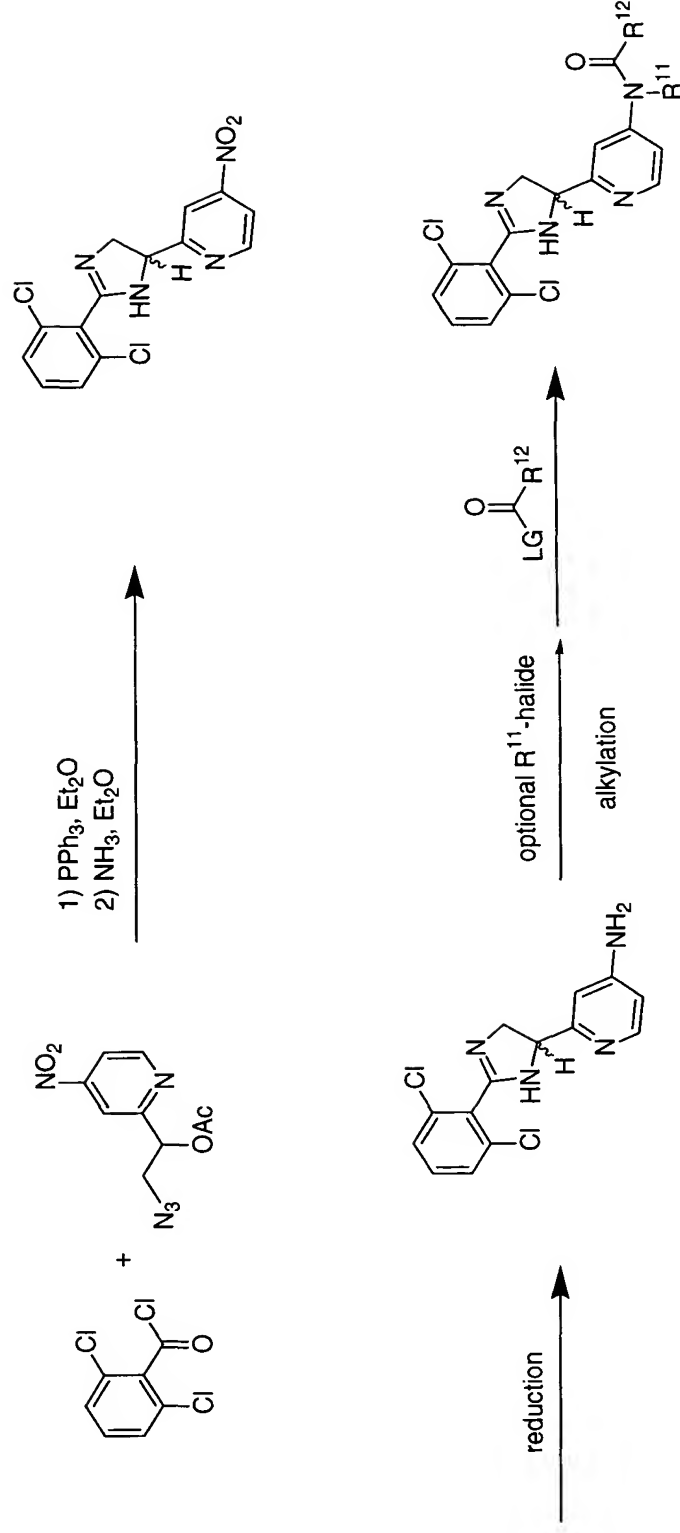
Figure 55  
Reverse Imidazole



Representative Reference:

Zhang, P-F et al., Synthesis 2001, 14, 2075-2077.

Figure 56  
2-Imidazoline

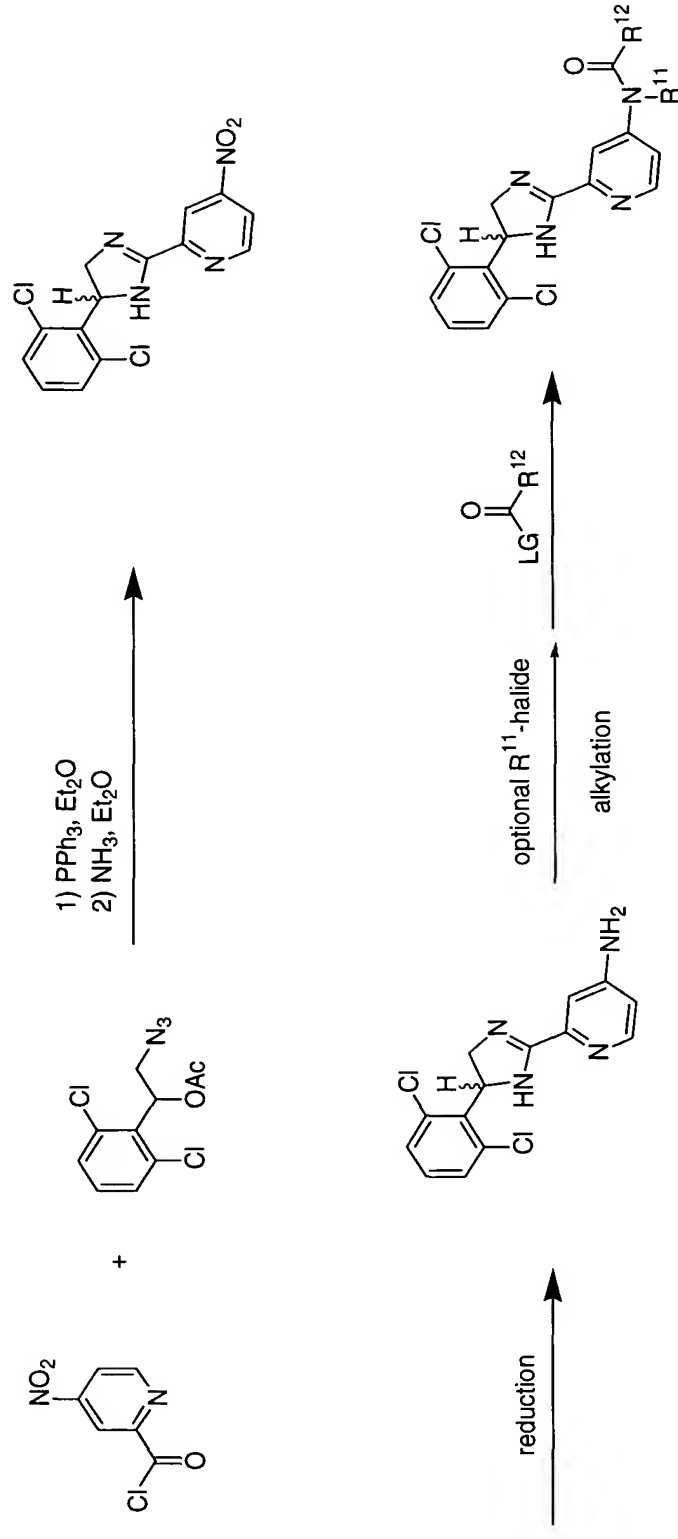


Representative Reference:

Molina, P et al., Synlett., 1995, 10, 1031-1032.

4R- and 4S- enantiomers

Figure 57  
Reverse 2-Imidazoline

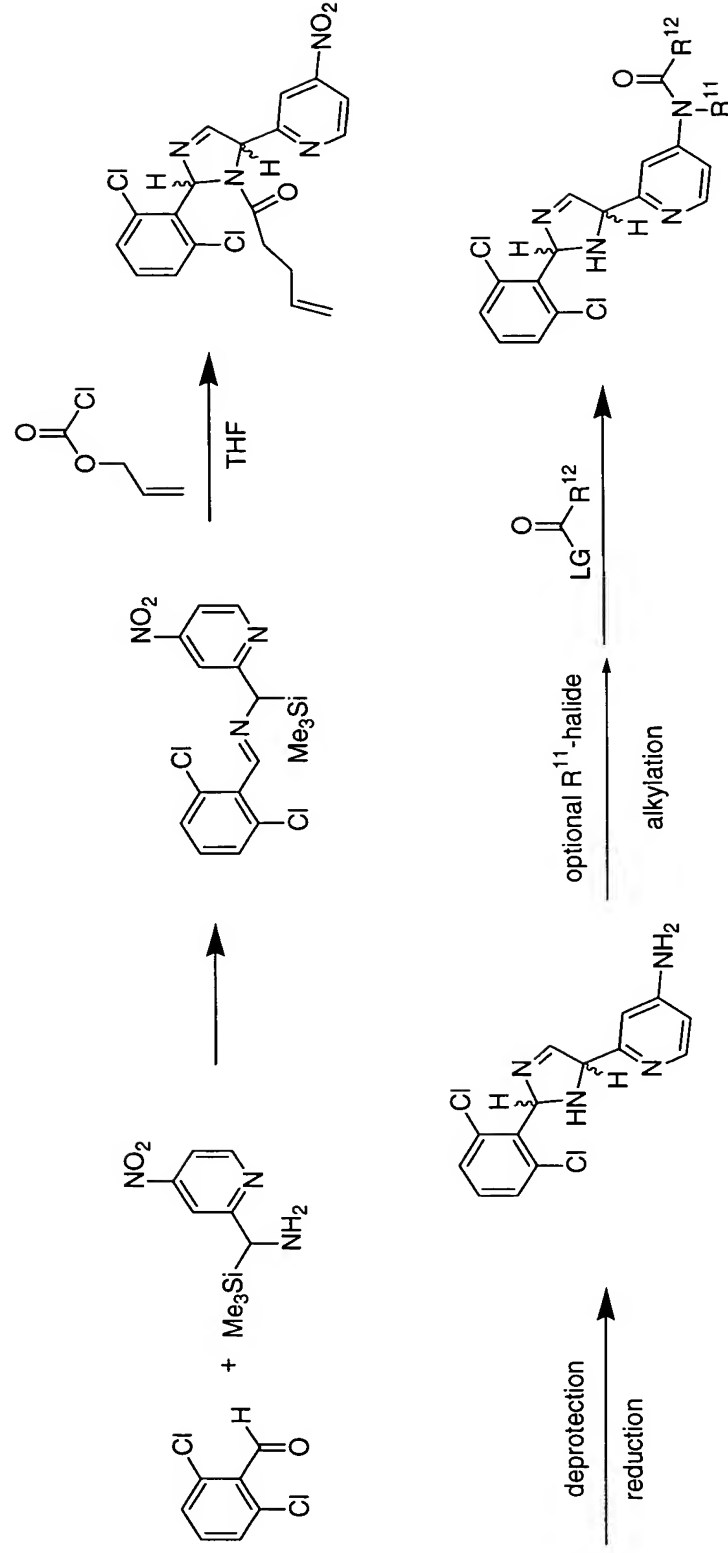


Representative Reference:

Molina, P et al., Synlett., 1995, 10, 1031-1032.

4R- and 4S- enantiomers

Figure 58  
3-Imidazolines

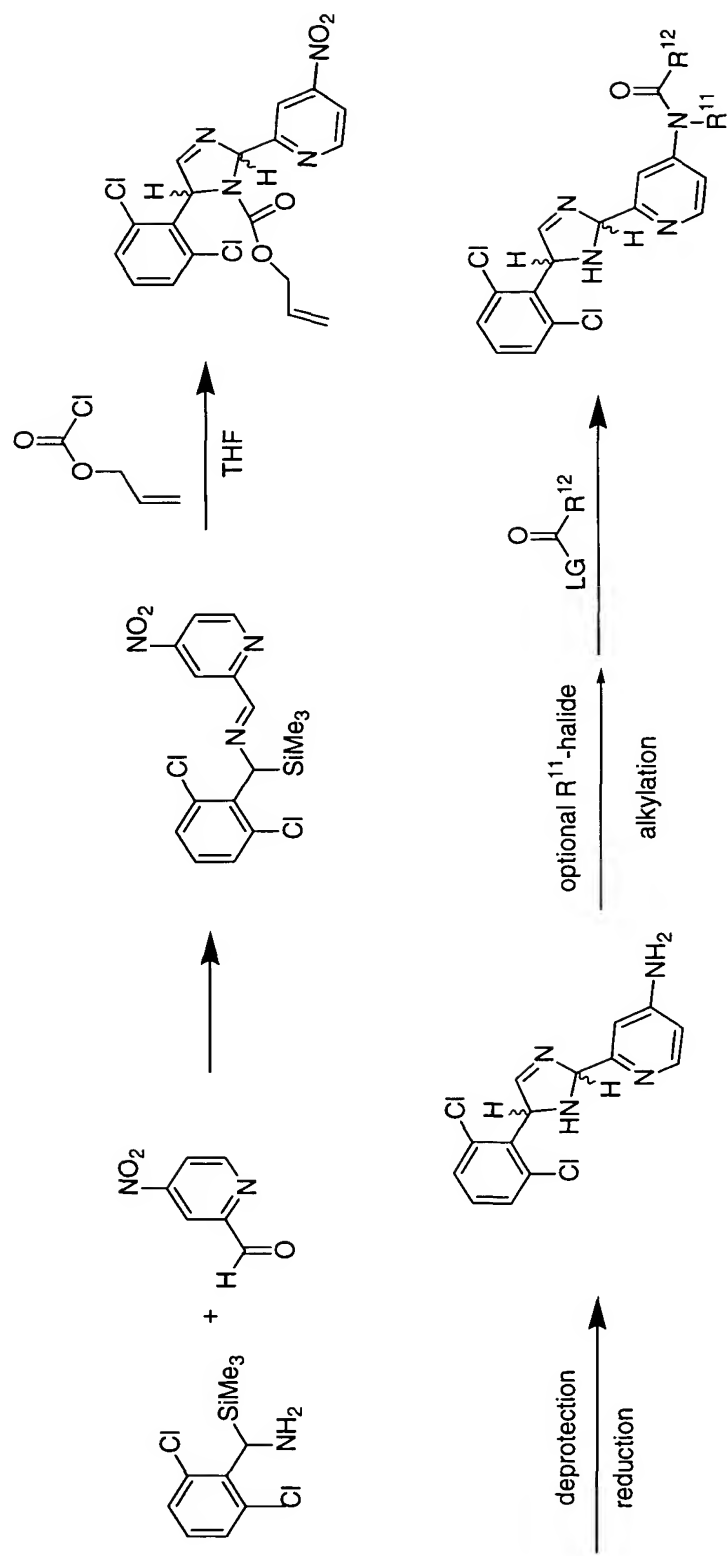


Representative References:

Iyoda, M et al., Chem. Lett., 1995, 12, 1133-1134.  
Katzenellenbogen, J.A et al., Tet. Lett., 1997, 38(25), 4359-4362.

cis- and trans- racemates  
2R,5R-, 2S,5S-, 2R,5S- and 2S,5R  
diastereoisomers

Figure 59  
Reverse 3-Imidazolines



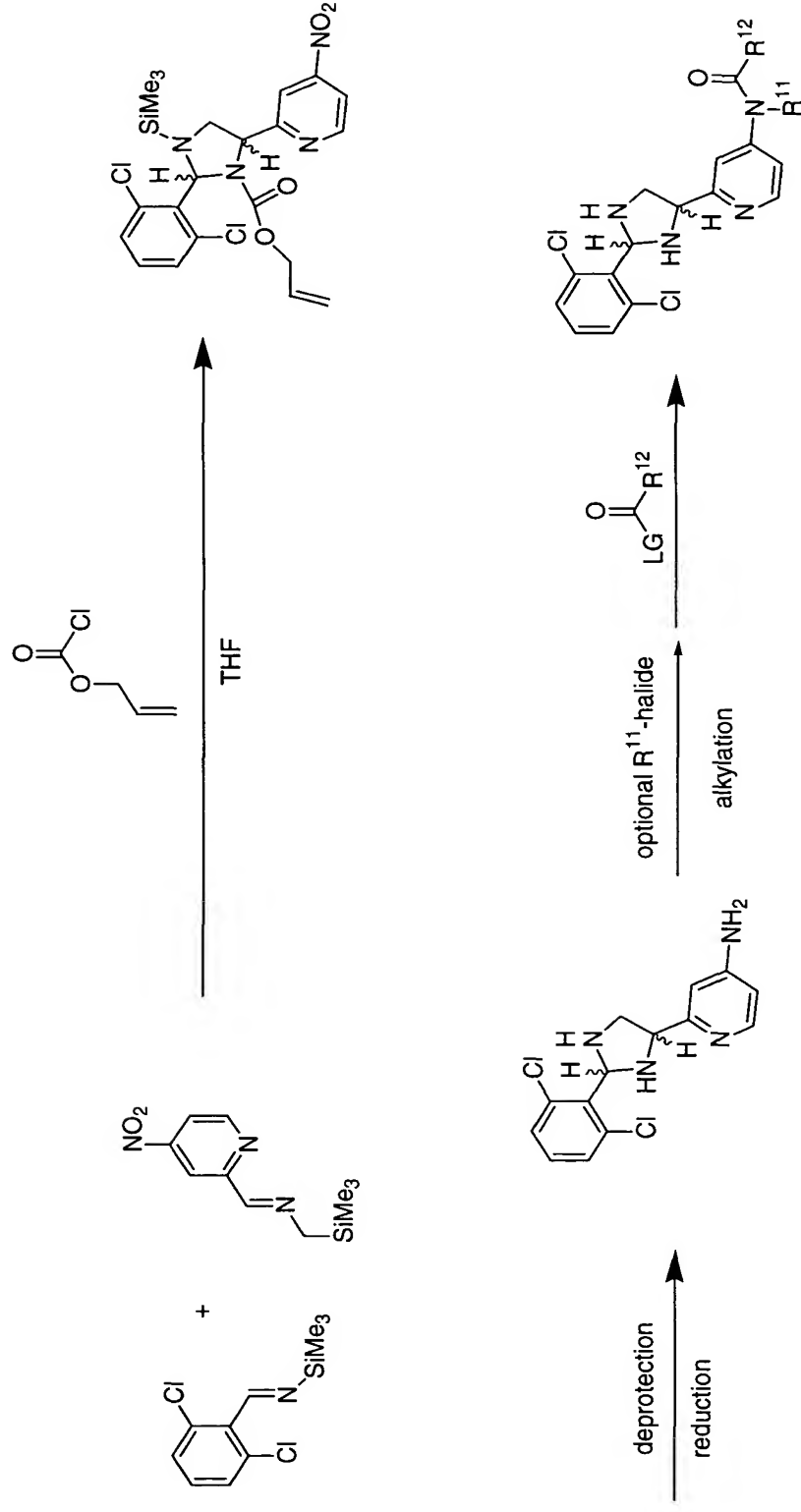
cis- and trans- racemates  
2R,5R-, 2S,5S-, 2R,5S- and 2S,5R  
diastereoisomers

Representative References:

Iyoda, M et al., Chem. Lett., 1995, 12, 1133-1134.  
Katzenellenbogen, J.A et al., Tet. Lett., 1997, 38(25),  
4359-4362.



Figure 60  
Imidazolidines

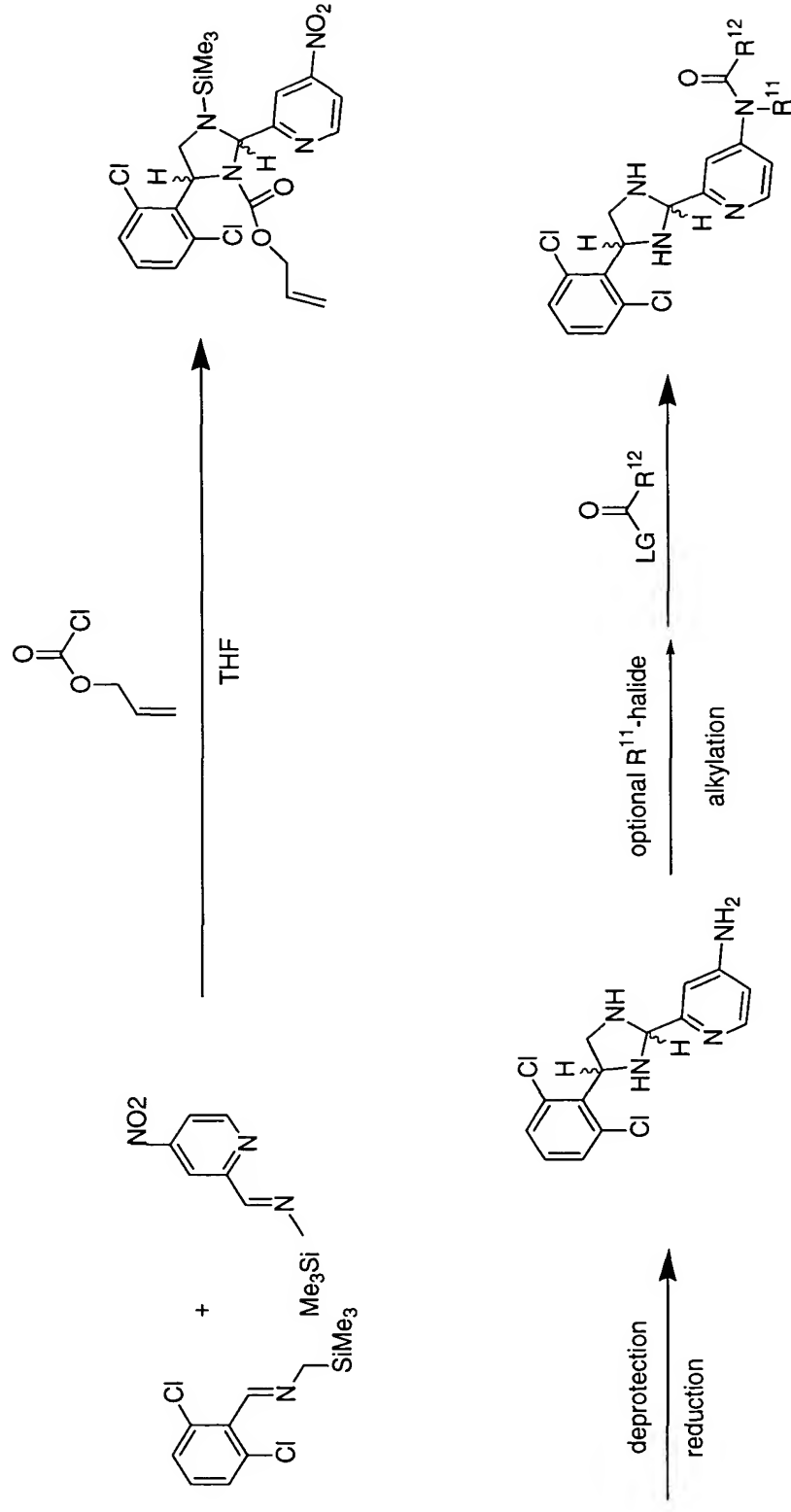


Representative References:

Achiwa, K et al Chem. Lett., 1981, 1213.

cis- and trans- racemates  
2R,4R-, 2S,4S-, 2R,4S- and 2S,4R  
diastereoisomers

Figure 61  
Reverse Imidazolidines

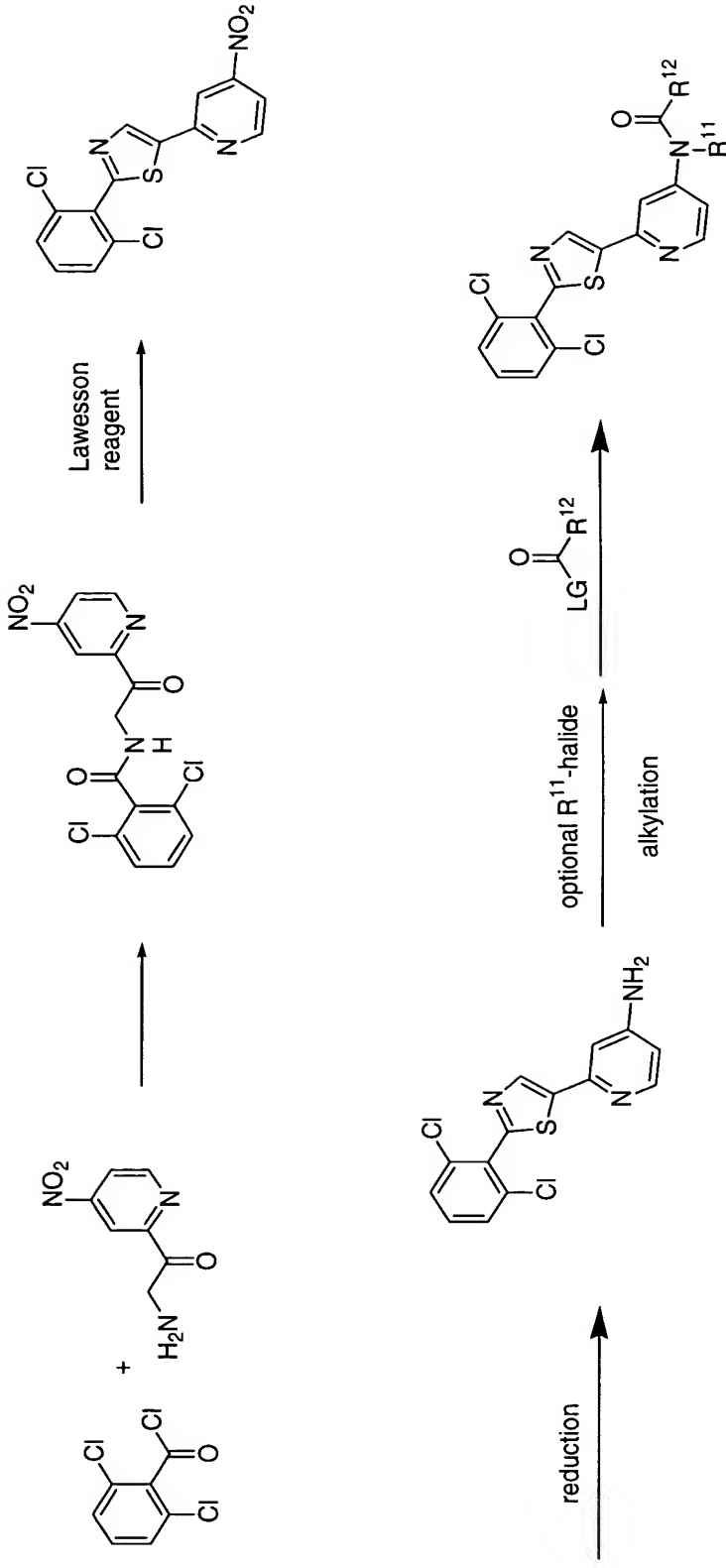


Representative References:

Achiwa, K et al Chem. Lett., 1981, 1213.

cis- and trans- racemates  
2R,4R-, 2S,4S-, 2R,4S- and 2S,4R  
diastereoisomers

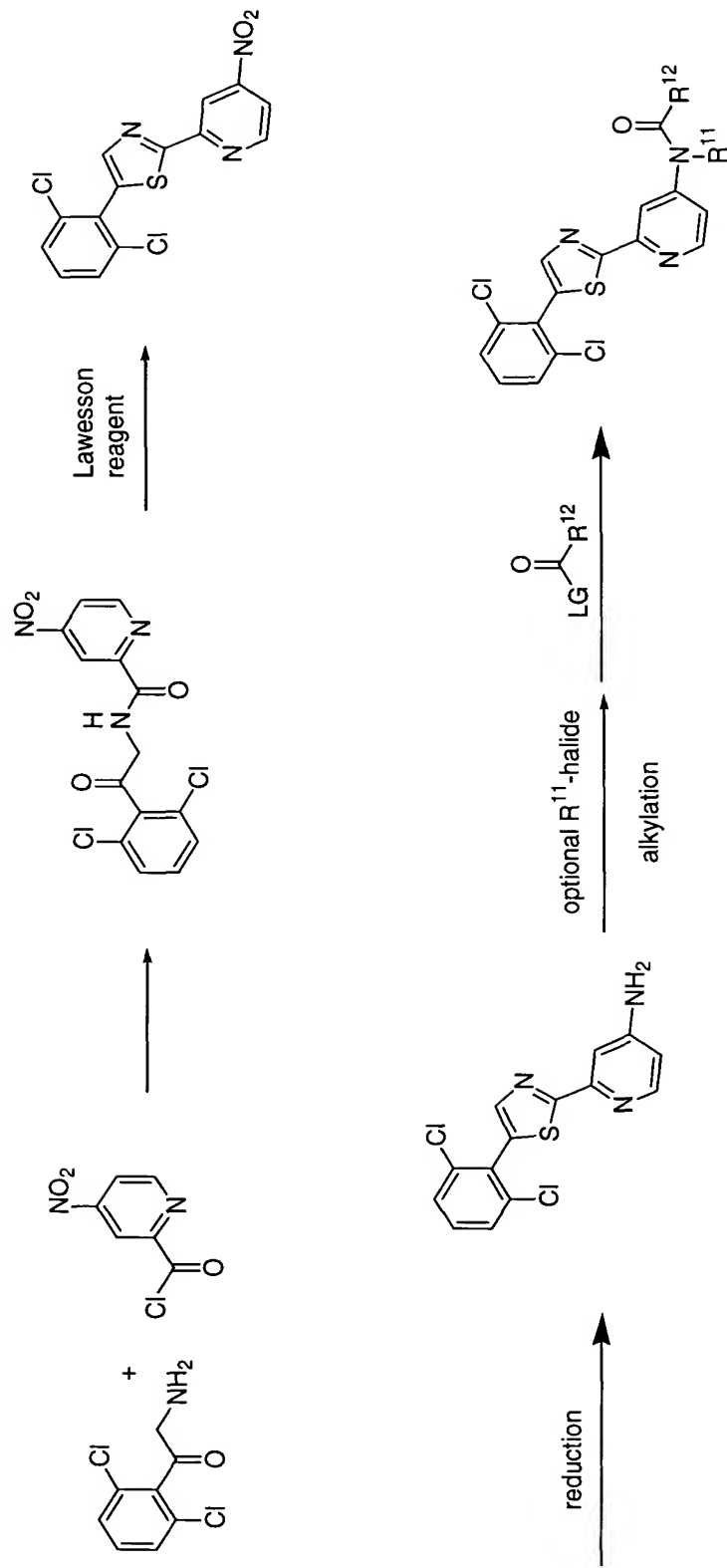
Figure 62  
Thiazole



### Representative References:

Lhotak, P et al Collect Czech Chem., 1993, 58 (11), 2720-2728.

Figure 63  
Reverse thiazole



Representative References:

Lhotak, P et al Collect Czech Chem., 1993, 58 (11), 2720-2728.